

KELP FOREST MONITORING HANDBOOK

VOLUME 2: DATA ENTRY



CHANNEL ISLANDS NATIONAL PARK



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Channel Islands National Park

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GENERAL ACCESS INFORMATION

Getting Started with Access

Any collection of information can be called a database; for example, names, addresses and phone numbers in a phone book is a database and numbers of a certain species of fish found at a particular site is also a database. Access is simply a computer program that tells the computer how to handle the information, or the data, in the database. More specifically, Access is a **relational database**. This term means that you can store information in multiple tables and relate the tables to each other. For example, you could type in a phone number and Access would give you the name and/or address of the person with that phone number (or vice versa).

Logging onto Access

To log onto Access: double click on the Access icon on your desktop.

Next, enter your logon name but do not enter your password, then click "OK."

Logging onto Access as SuperKF

When you are logged into Access using your logon name you will not be able to delete any records or make large changes to the database. If you try to make changes, an error message (No Permission) will appear. If you know that you are going to need to make changes to the database (such as during data checking) you will need to log into Access using the logon name "SuperKF."

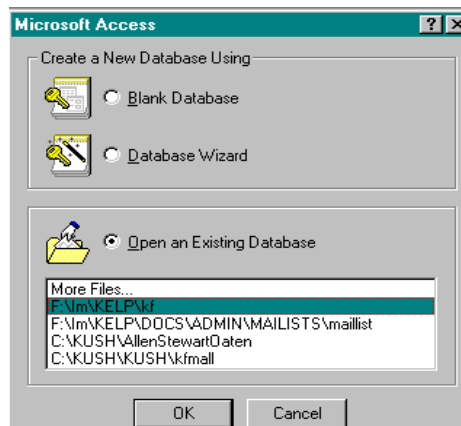
To logon as SuperKF:

1. Double click on the Access icon on your desktop.
2. Enter "SuperKF" as the logon name but do not enter a password, then click "OK."

****IMPORTANT: If you are logged on Access as SuperKF you have the clearance to delete records and seriously change the database! Be very careful and be sure to check with the program manager before deleting records or updating information in the database.****

Opening a database

Which ever way you log on to Access, the "open database" dialog box, shown below, will appear. You can now create a new database or open a database that already exists in which you would like to work. Since the kelp forest monitoring data are already in a database, you need to select **F:\IM\Kelp\kf** and then click "OK"



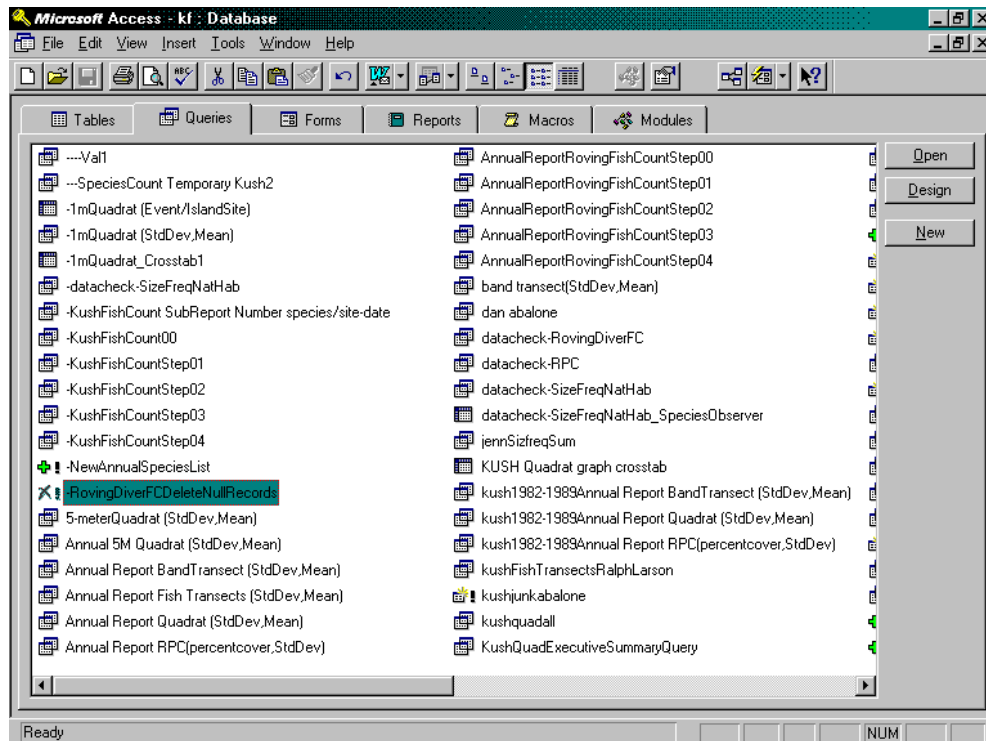
NOTE: If the open database dialog box did not automatically appear on the screen, then click on the File pull down menu and then click Open Database. Next go to F:/IM/KELP/ and open the database kf.

The screen should now look similar to the picture below, with the database window being displayed.

Database Objects

There are six types of objects in Access: Tables, Queries, Forms, Reports, Macros, and Modules. In the picture below, each of these objects will resemble the tab of a hanging file or a manila folder. Objects consist of the data and tools you need in Access.

In order to pick the type of object you would like to work with, make sure that the database window is open. Now click once on the object "tab" that is labeled with the object name and object icon. When you click on an object tab, a list of all existing files for the database object will appear.



Generally, in the kelp forest monitoring database (**kf**) you will only be working in Tables, Queries and Forms. These objects are described below.

Tables

Raw data are stored in tables. Any changes made within a table will directly affect the data stored in that table. Because it is possible to permanently alter the data when working in table view, it is strongly advised that you do **NOT** work directly with a table unless absolutely necessary. A better alternative is to work with Forms or Queries.

The Tables that contain the raw data for each of their respective sampling procedure are marked with a dash (-) in front of the name. Examples of Table names in the kelp forest monitoring database (**kf**) are:

-5mQuadrat	-SizeFreqArms	-SizeFreqGorgonian
-BenthicFishTransect	-SizeFreqNatHab	-Shells
-1mQuadrat	-MidwaterFishTransect	-BandTransect
-RovingDiverFishCount	-SizeFreqMacrocytis	-RandomPointContact

Forms

Forms show the raw data from Tables organized in a more "presentable" or customized format. Generally this means that the data presented in Forms mimics the layout of the data sheets that we use in the field.

The data shown in Forms are still raw data and any changes to the data made in Forms will be permanently saved. Although the integrity of the data can still be compromised when using Forms, it is preferable to perform data entry or changes to the data in the Forms view. The possibility of altering large portions of data is greatly reduced. The use of Forms for data entry is described in detail for each sampling procedure.

Queries

Queries are questions that you ask the database and they are used to extract information. Queries are very flexible and by designing exactly what you need you can search, sort, and retrieve specific data. Forms also use Queries so that only certain records appear on the screen.

Access has many types of queries, but generally the ones you will be designing and using are: Select, Update, Append, and Delete Queries.

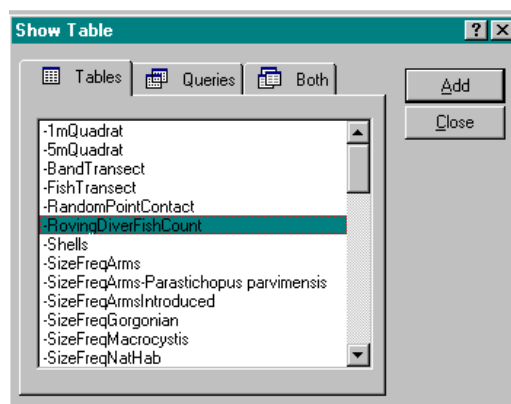
Select Queries

These are the most common types of queries. A select query, as you might guess, selects information from one or more tables based on criteria that you specify. Once the query has run, the specific information that you asked for is displayed in a table.

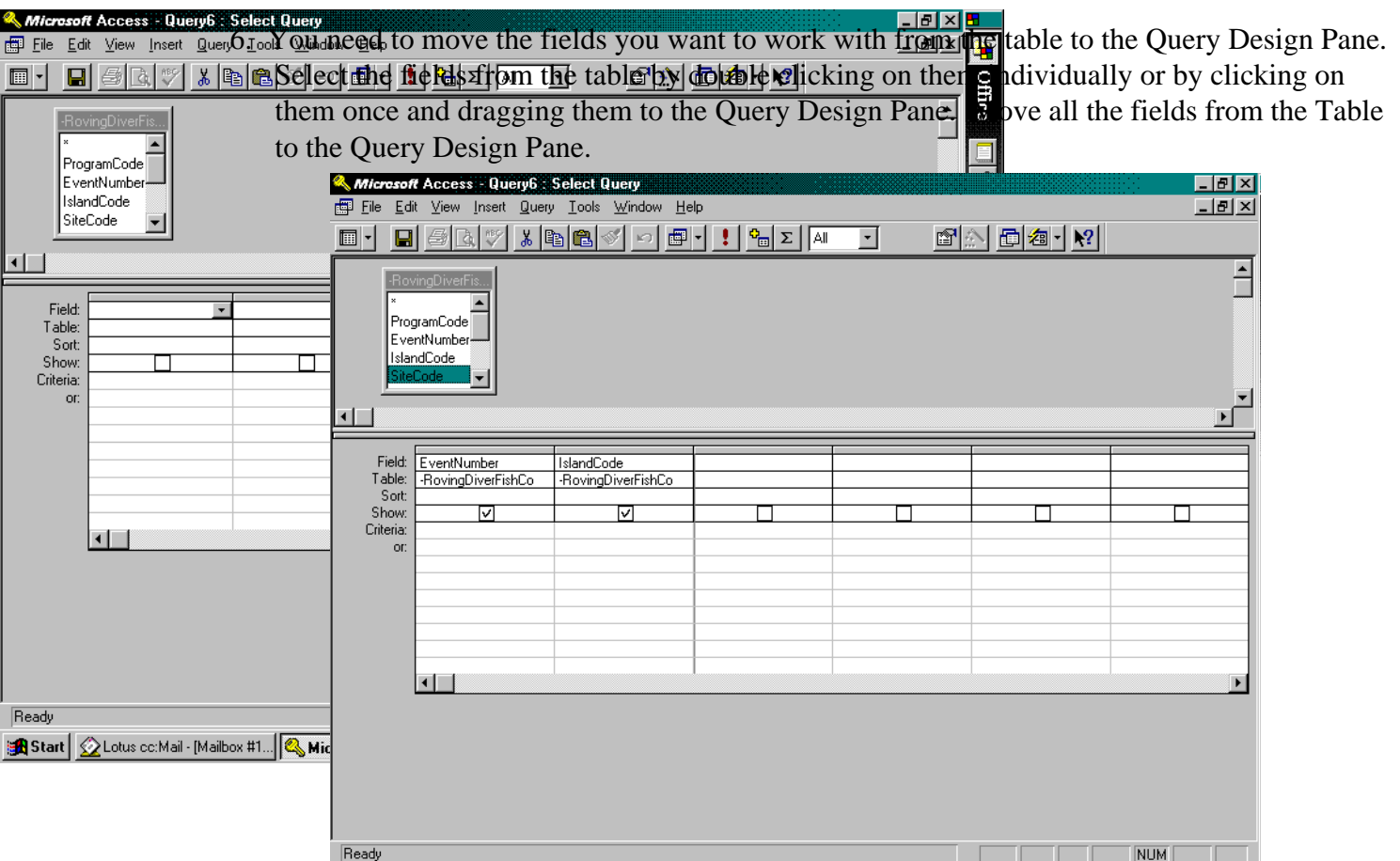
As an example, let's say that you want to know where and when Giant Black Sea Bass were observed on the Roving Diver Fish Count in 1996. To answer this question (query) follow these steps:

1. In the database window, click on the Queries tab.
2. Click on the New button.
3. The New Query dialog box appears, select Design View, then click on the OK button.
4. After you select new query, Access opens a window and a dialog box as shown below. The dialog box allows you to pick the tables that you want to query. In this case we want to ask about the Roving Diver Fish Count, so select the table -RovingDiverFishCount and then click the OK button. Now click the Close button.

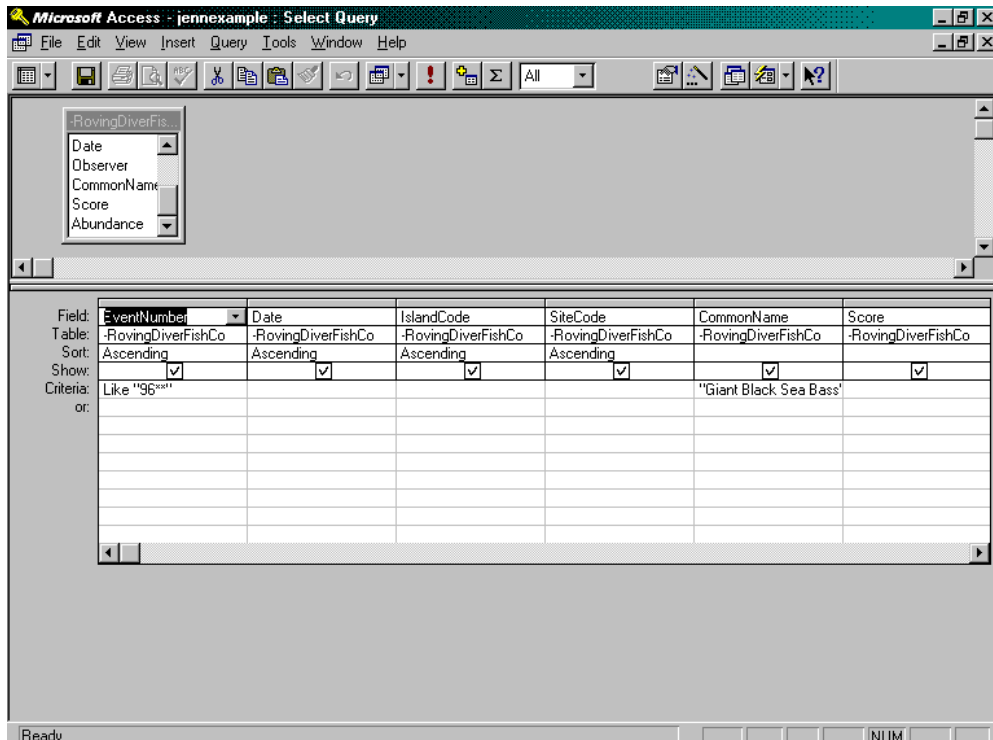
Note: In this query we are only interested in data from one table, however you can add multiple tables depending on your question.



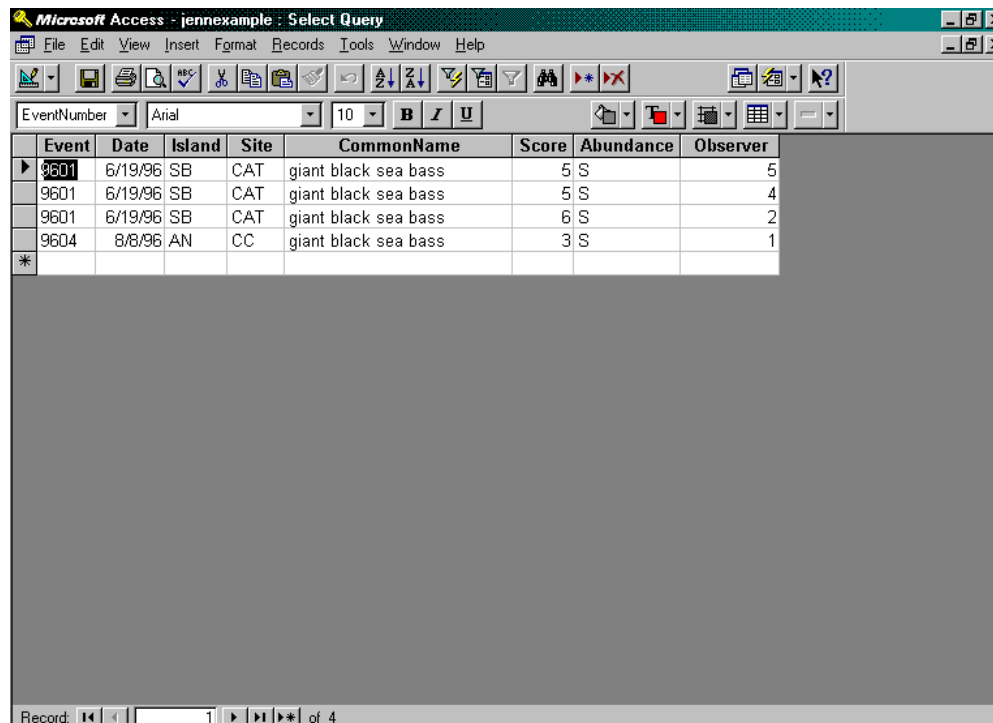
5. The Query window in design view (as shown below) is now open. The table in the top half of the window is the table you are going to query. The bottom half of the window is called the Query Design Pane and it is here that you ask your question.



- Now you need to specify the criteria for data you are selecting. In the criteria row of the Event number column, type "96*". This tells Access to select all data points with the event number 96 as the first two numbers and anything as the last two numbers. Next, in the criteria row of the Common Name column, type "Giant Black Sea Bass".



- Now hit the Run button, a red exclamation point located in the tool bar, or click on the Query pull down menu and select Run.
- The data you just asked for are now selected and placed in a table for you to see.



10. Close the Table and do NOT save (see section below on saving queries).

Update, Append and Delete Queries

All of these queries are *action queries*. Action queries allow you to change the data in existing tables and you can change many records with a single operation. ****Be very careful when running action queries!!**** The best method when using an action query is to design your query as a select query, run the query and look at the records that you have selected. If your query selected the records you want to act upon, then change the query to an action query. To change the type of query, click on the Query pull down menu and select the type of query you need. Next you can use the Query Design Pane to specify what you need updated, deleted or appended.

NOTE: In order to run an action query you must be logged on to Access as the user "SuperKF" (See the page 1 about logging on as "SuperKF" if you are unfamiliar with this procedure).

Saving Queries in the "kf" database

Since Queries are used all the time, it is easy to end up with too many of them saved in the database, therefore it is important to only save the queries that you will need. If you create a query that will only be used once, do not save it. Queries saved by individuals should be labeled with the first four letters of their last name followed by an abbreviation of what the Query contains (Example: kushband83). Do not give a query the same name as a Table in your database. If you try, you will get an error message asking you if you want to replace the Table. If you chose "Yes," the table and all its data will be destroyed.

DATA ENTRY PROCEDURES

Data input and storage are different for each of the Kelp Forest Monitoring sampling methods, therefore data entry procedures are discussed by sampling method. Each sampling method has detailed step-by-step instructions for data input into Microsoft Access. The instructions all follow the same basic layout: first data entry procedures are listed; next is a "Data Checking" section and finally a "Data Corrections" section. Some techniques have addition, pertinent sections. The text is accompanied by pictures of the computer screen showing the windows and dialog boxes you will encounter as you enter data.

The methods used to collect the data are not discussed here, sampling protocol is described in Volume 1 of this handbook. Since data collection began in 1981 there have been changes in sampling techniques. A history of each sampling technique is described in Volume 1 of this handbook; changes in sampling protocol and year to year data compatibility are explained.

Sampling Events

Event numbers

In order to help organize the data in Access, every kelp forest sampling cruise is assigned a unique number. The numbers are called sampling "Event numbers" and are comprised of a 4 digit number. The first 2 digits refer to the year and the second two refer to the sampling cruise number. For example, 9603 corresponds to the third cruise in 1996. Event number 9304 refers to the fourth cruise in 1993, and so on.

Creation of sampling events

After each cruise a new sampling event needs to be created prior to data entry. A sampling event is created only ONCE. To create a sampling event follow the procedure described below.

1. Log on to Access and open the existing KF database.
2. Click on Forms tab.
3. Double click on Sampling Events

A blank sampling event form will now appear.

A form similar to the one below will appear

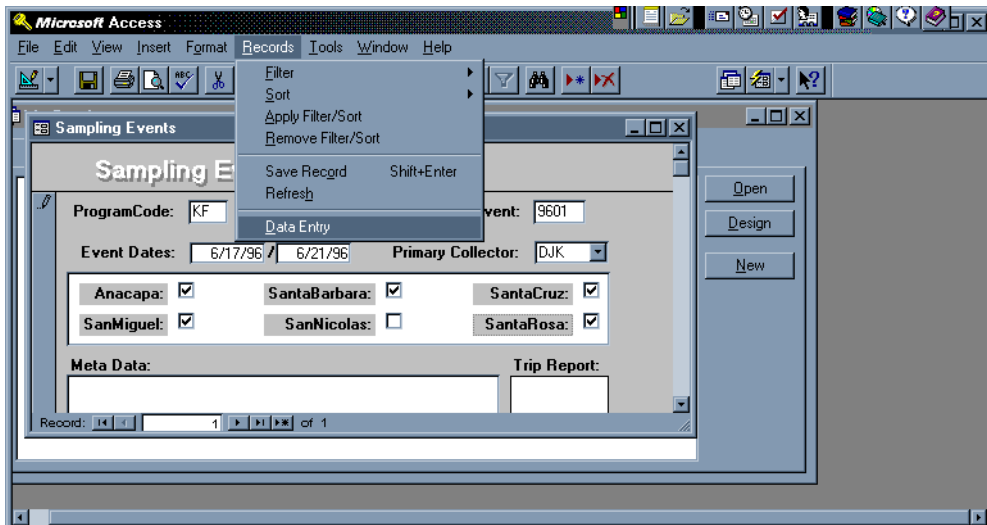
The screenshot shows a Microsoft Access form titled "Sampling Events". The form contains the following fields and controls:

- ProgramCode:** Text box with "KF".
- Event:** Text box with "9603".
- Event Dates:** Two date pickers showing "7/22/96" and "7/26/96".
- Primary Collector:** Dropdown menu showing "DJK".
- Location Checkboxes:**
 - Anacapa: ☒
 - SantaBarbara: ☐
 - SantaCruz: ☒
 - SanMiguel: ☒
 - SanNicolas: ☐
 - SantaRosa: ☐
- Meta Data:** A large empty text box.
- Trip Report:** A large empty text box.
- Record Navigation:** At the bottom, it says "Record: 1 of 1" with navigation buttons.

4. Click on the New Record icon located in the toolbar

OR

Click on Records pull down menu and select Data Entry

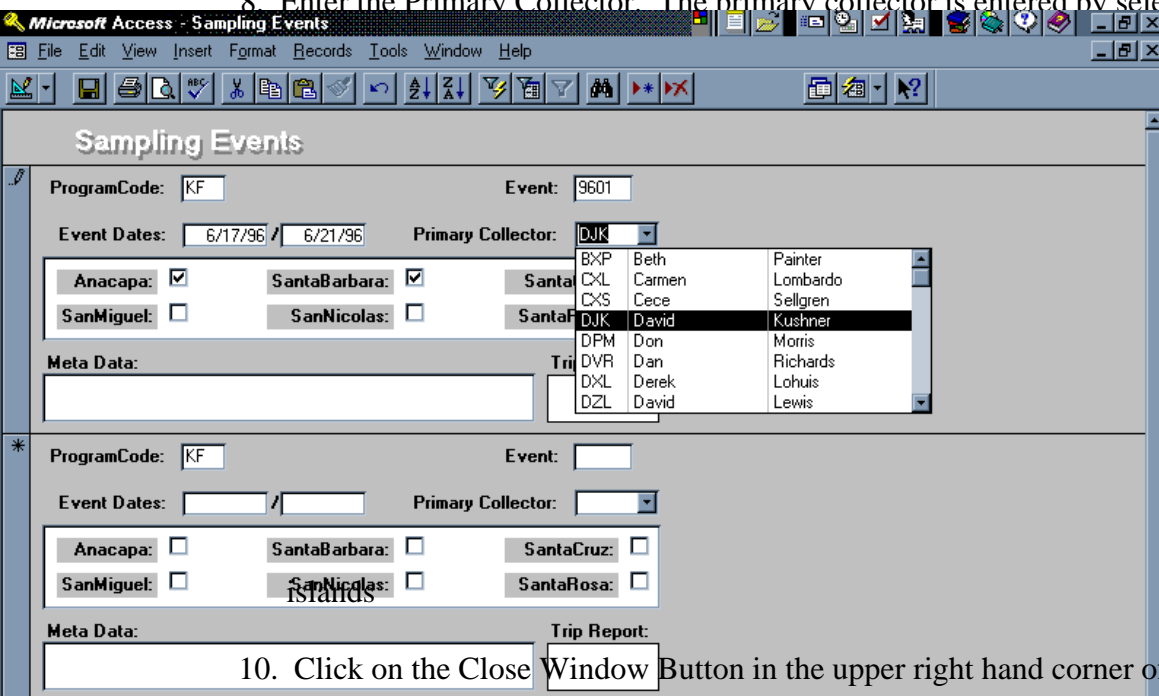


5. Check to see if program code defaults to KF (Kelp Forest).

6. Enter the Event Number.

7. Enter the Event Dates of the associated KFM cruise. For a typical KFM cruise, the dates entered are the Monday the cruise starts and the Friday the cruise ends.

8. Enter the Primary Collector. The primary collector is entered by selecting a name from the



the box to the right of each

10. Click on the Close Window Button in the upper right hand corner of the screen.

Note: Any important information can be written in the Meta Data section, however there is no need to duplicate information that will be presented in the trip report.

Island Codes and Site Codes

Each island and each site is assigned a two letter code. You will be asked to enter these codes during data entry.

ISLAND	ISLAND CODE	SITE	SITE CODE
Santa Barbara	SB	Cat Canyon	CAT
	SB	South East Sea Lion	SESL
	SB	Arch Point	AP
Anacapa	AN	Admiral's Reef	AR
	AN	Cathedral Cove	CC
	AN	Landing Cove	LC
Santa Cruz	SC	Fry's Harbor	FH
	SC	Gull Island	GI
	SC	Pelican Bay	PB
Santa Rosa	SC	Scorpion Anchorage	SA
	SR	Johnson's Lee North	JLNO
	SR	Johnson's Lee South	JLSO
San Miguel	SR	Rode's Reef	RR
	SM	Hare Rock	HR
	SM	Wyckoff Ledge	WL

Observer Numbers

The observer number is the number associated with each person on a sampling cruise. This number will be utilized during data entry for some of the sampling techniques (e.g. fish and size frequencies). The observer numbers are obtained by alphabetizing all the names on the cruise manifest. (The manifests are located under F:\im\kelp\docs\reportXX, where XX represents the year. For example: F:\im\kelp\docs\report97 will contain the 1997 manifests.) The alphabetized list of observers is then assigned numerical values in ascending order.

Pacific Ranger Manifest Channel Islands National Park **1996 Kelp Forest Monitoring Project**

Dates____**August 5 - 9**

Cruise # 4

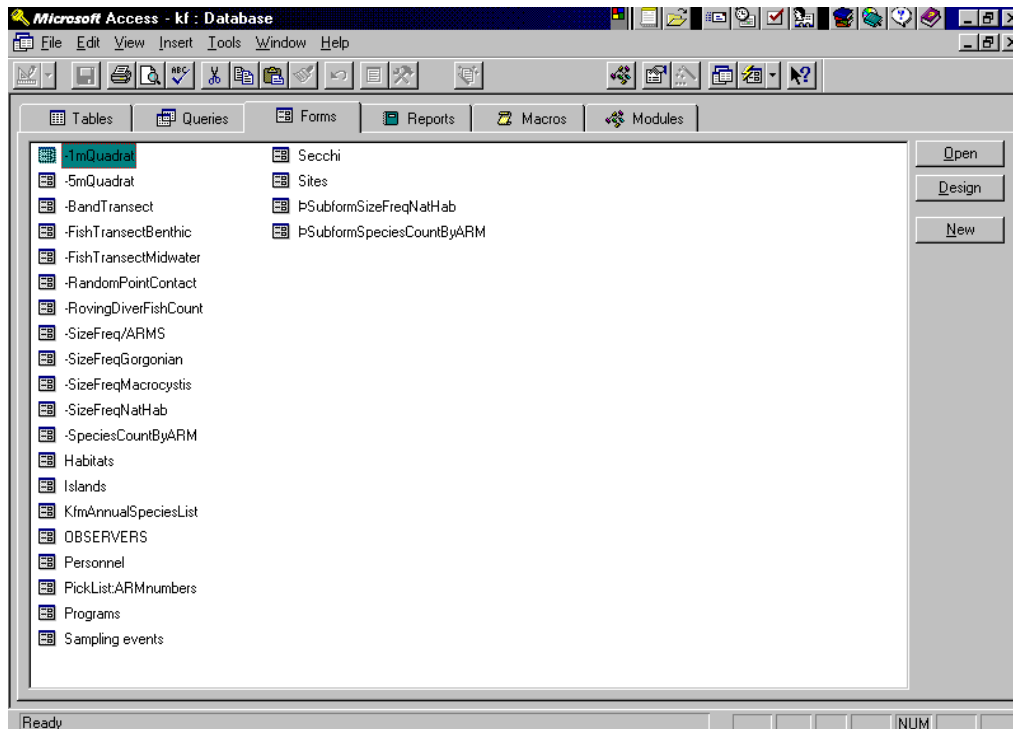
Tentative destination: SRI

Observer #	Name	Affiliation	Phone #
1.	Berg, William	UCSC	(408) 999-9999
2.	Kushner, David	CHIS	(805) 888-8888
3.	Lerma, Derek	CHIS	(805) 777-7777
4.	Manjani, Eric	CHIS-VIP	(818) 666-6666
5.	Mollenkoph, Peggy	CHIS	
6.	Mondragon, Jeff	CHIS	
7.	Morgan, Jennifer	CHIS	
8.	Paddack, Michelle	UCSC	(408) 555-5555
9.	Richardson, Diane	CHIS	(805) 444-4444
10.	Taniguchi, Ian	CADF&G	(714) 333-3333

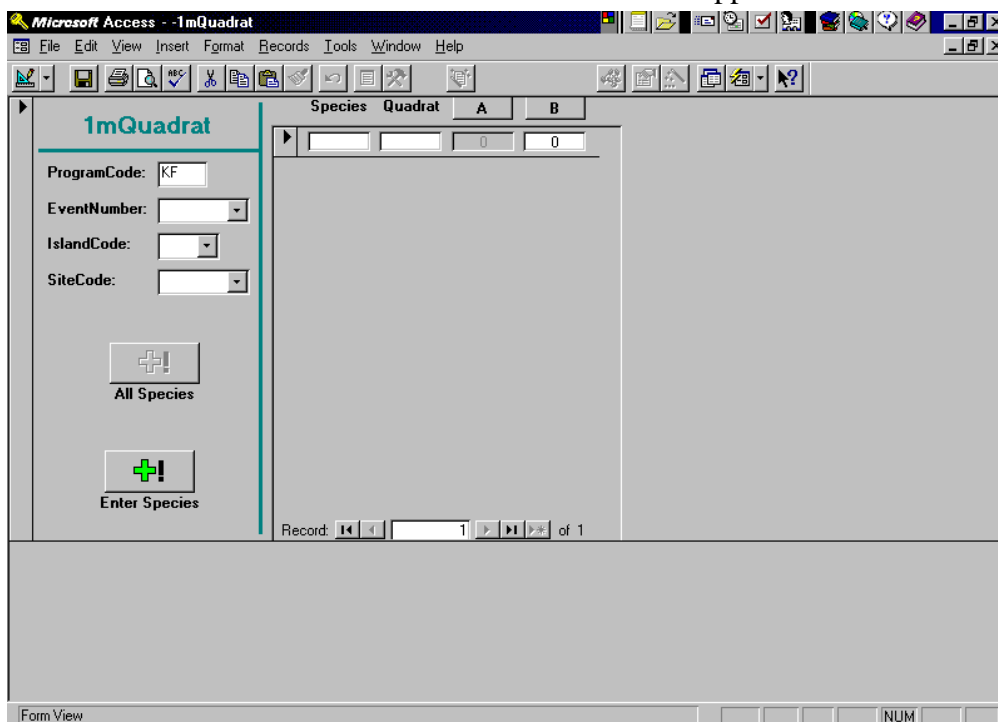
1 Meter Quadrats

Prior to entering data into Access you must arbitrarily assign the two observers as either Count A or Count B. Write down these assignments on the top of the raw data sheets.

1. Click on Forms tab.
2. Double click on -1mQuadrat.



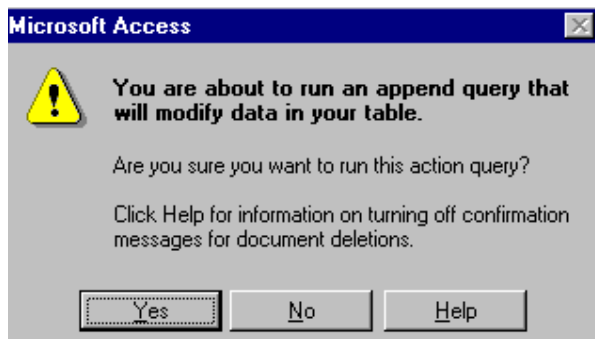
A form similar to the one below will appear.



3. Enter the Event number.
4. Enter the Island code.
5. Enter the Site code.
6. Click on the Run Query icon labeled “All Species” .



7. Click “yes” to the message:



8. Click “yes” to the message:

A screenshot of the Microsoft Access 1mQuadrat form. The form has a left sidebar with fields for ProgramCode (KF), EventNumber (9704), IslandCode (SC), and SiteCode (YB). Below these are two buttons: "All Species" (green plus and exclamation mark) and "Enter Species" (green plus and exclamation mark). The main area is a table with columns: Species, Quadrat, A, and B. The table contains 13 rows of data. The first 12 rows have Species 14027 and Quadrat 1 through 12. The last row has Species 14026 and Quadrat 1. All cells in columns A and B contain the value 0. At the bottom of the table, it says "Record: 1 of 240". The Windows taskbar at the bottom shows the Start button, open windows for Microsoft Access and Microsoft Word, and the system clock showing 8:46 AM.

Species	Quadrat	A	B
14027	1	0	0
14027	2	0	0
14027	3	0	0
14027	4	0	0
14027	5	0	0
14027	6	0	0
14027	7	0	0
14027	8	0	0
14027	9	0	0
14027	10	0	0
14027	11	0	0
14027	12	0	0
14026	1	0	0

to the one below.

9. If any additional species were counted in the quadrats besides the ones printed on the data sheets go to step #10.
If no additional species were measured go to step #15.

10. Run the Enter Species Query.

11. Click "yes" to the message:

12. Enter the species number of the additional species that was measured.
13. Click "yes" to the message:

14. If there were more than one additional species measured, then repeat steps 10-13.
15. Make sure that the Event number, Island code, and Site code are correct.
16. Enter the data.

NOTE: One of the columns will appear shaded. Data cannot be entered in the shaded column. Clicking on the column heading (A or B) will allow you to enter the data for that column. Be sure to enter the Count A data into the Count A column and the Count B data into the Count B column.

17. After entering the data into both columns, chose close under the file pull down menu or click on the close window button.

Data Checking:

Data are checked in the form view. Repeat steps 1-5, for the data sheet you wish to check. Have one person read the data sheet while another person simultaneously reads the computer screen.

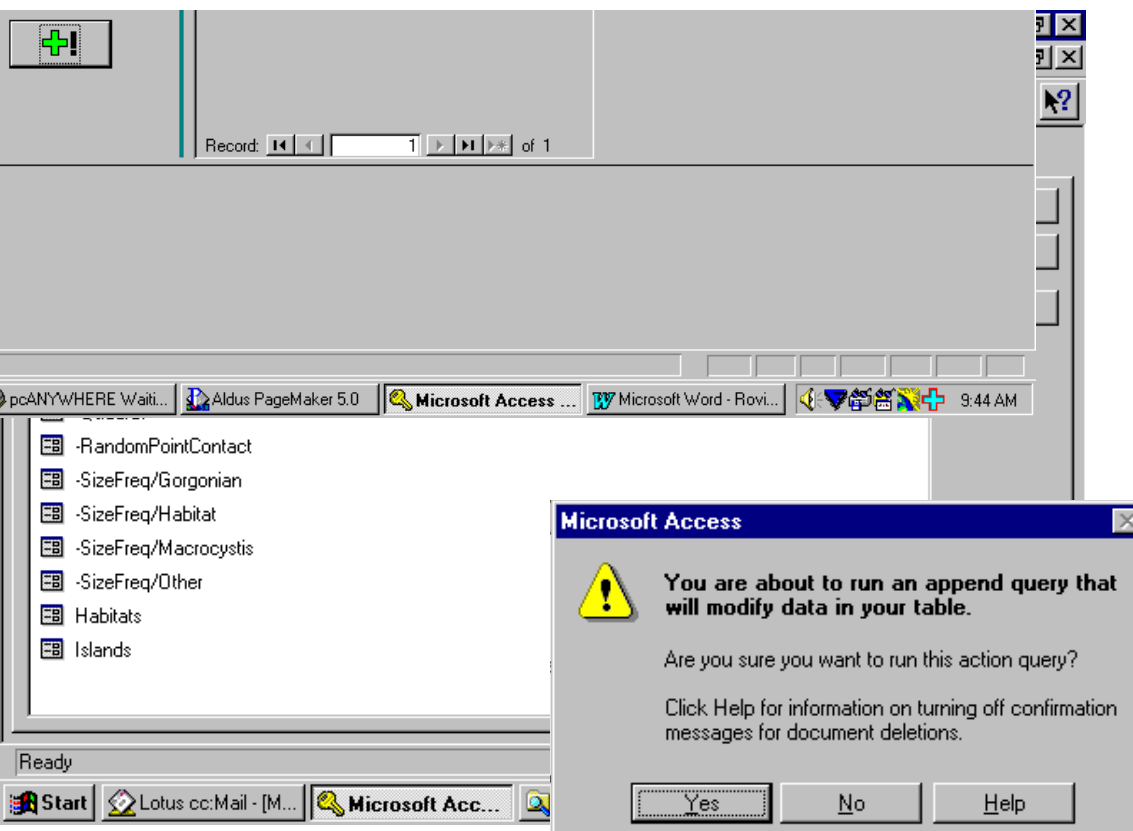
Data Corrections:

If the mistakes occur in the A or B count columns corrections can be made in the form view. Move the cursor to the cell where the error occurs and make the corrections.

If the mistakes are in the Event, Island, Site, or Species fields they must be corrected using a query. If you are unfamiliar with the correct procedure for running a query read pages 4-7 on queries.

5 Meter Quadrats

1. Click on Forms tab.
2. Double click on -5mQuadrat



8. Click “Yes” to message:

A form similar to the one below will appear.

Make sure that the Event number, Island code, and Site code are correct prior to data entry.

9. Enter the data.

Note: Each sampling site has two data sheets. One data sheet is marked with quadrats 1-20 and the other is marked with quadrats 21-40. Be sure to enter the correct count into its corresponding quadrat.

10. Once data entry is complete close the form by selecting Close under the File pull down menu.
11. After each data sheet is entered into Access *Entered* should be written in red pen at the top of the sheet.

Data Checking:

Repeat steps 1-5. Have one person read the data sheet, while the other person reads the computer screen to ensure all data are correctly entered. Write "checked" at the top of the data sheet.

Data Corrections:

Mistakes that occur in the Count column can be made in the form view. Since data are checked in the form view, corrections can be made as they are encountered. Move the cursor to the cell where the error occurs and make the correction. Remember that only the count column is active. Corrections to the other fields (e.g. Event number, Island code, or Site code) must be done using a query. If you are unfamiliar with the correct procedure for running a query read pages 4-7 on queries.

Band Transects

Prior to entering data into Access you must arbitrarily assign the observers at each site as either Count A or Count B. Write down these assignments on the top of the raw data sheets.

1. Click on Forms tab.
2. Double click on -BandTransect.

A form similar to the one below will appear.

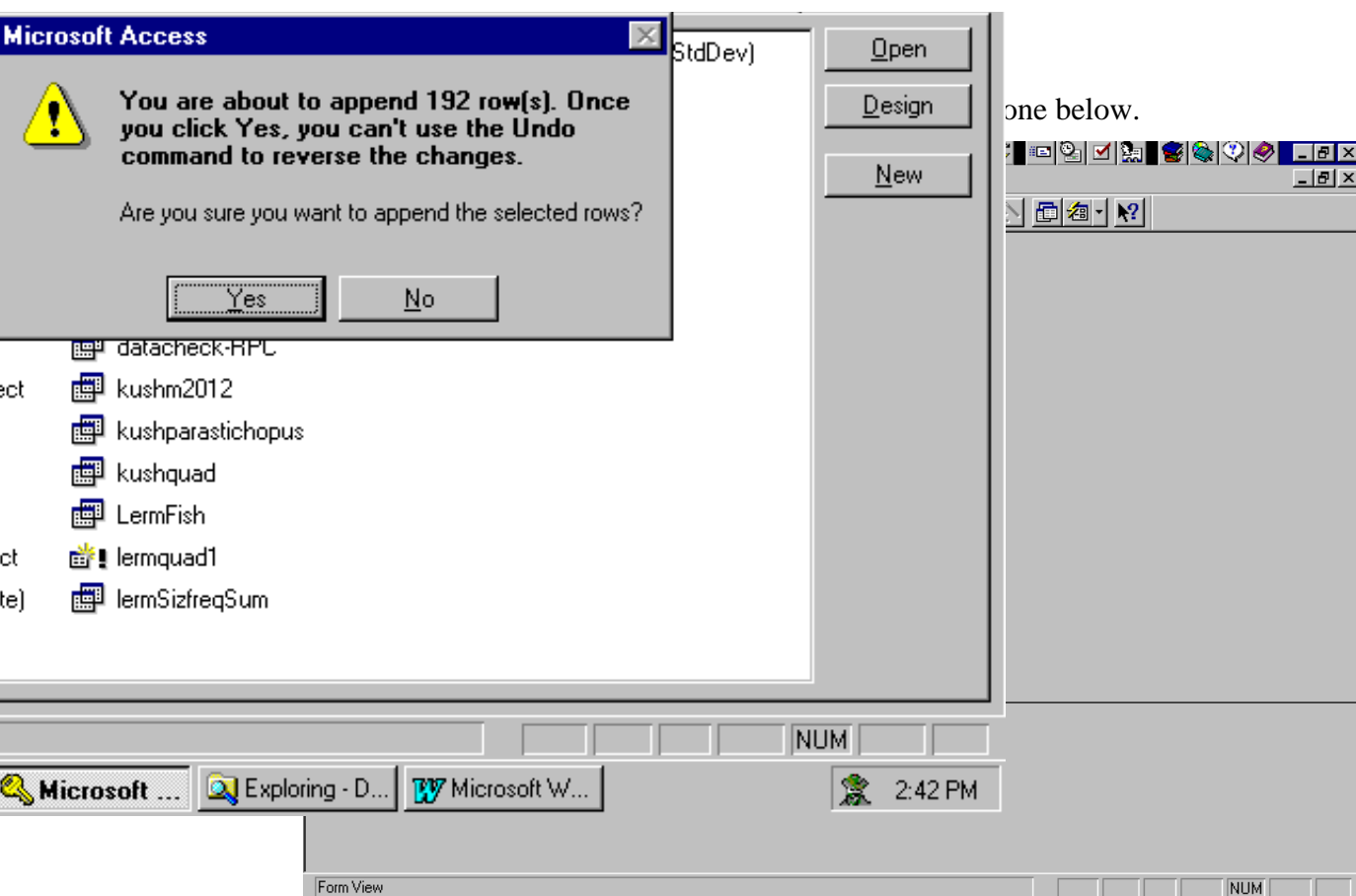
The screenshot shows a Microsoft Access form titled "BandTransect" within a window labeled "-Quadrat". The form is divided into two main sections. On the left, there are four input fields: "ProgramCode:" with the value "KF", "EventNumber:" with a dropdown arrow, "IslandCode:" with a dropdown arrow, and "SiteCode:" with a dropdown arrow. Below these fields is a button with a plus sign and an exclamation mark. On the right, there is a table with four columns: "Species", "Transect", "A", and "B". The "Species" and "Transect" columns have empty text boxes. The "A" and "B" columns have numeric input boxes, both containing the value "0". At the bottom of the form, there is a "Record:" label followed by navigation buttons (back, forward, first, last) and a text box containing the number "1", followed by "of 1".

3. Enter the Event number.
4. Enter the Island code.
5. Enter the Site code.
6. Click on the Run query icon.



7. Click “Yes” to message:

8. Click “Yes” to message:



9. Enter the data.

Note: Make sure that the Event number, Island code, and Site code are correct prior to data entry. One of the columns will appear shaded (column A above). Data cannot be entered in the shaded column.

Clicking on the column heading (A or B) will allow you to enter the data for that column. Be sure to enter the Count A data into the Count A column and the Count B data into the Count B column.

10. After entering the data into both columns, select close under the file pull down menu or click on the close window button.

Data Checking:

Data are checked in the form view. Repeat steps 1-5, entering the Event number, Island code, and Site code for the data sheet you wish to check. Have one person read the data sheet while another person simultaneously reads the computer screen. Write "checked" at the top of the data sheet.

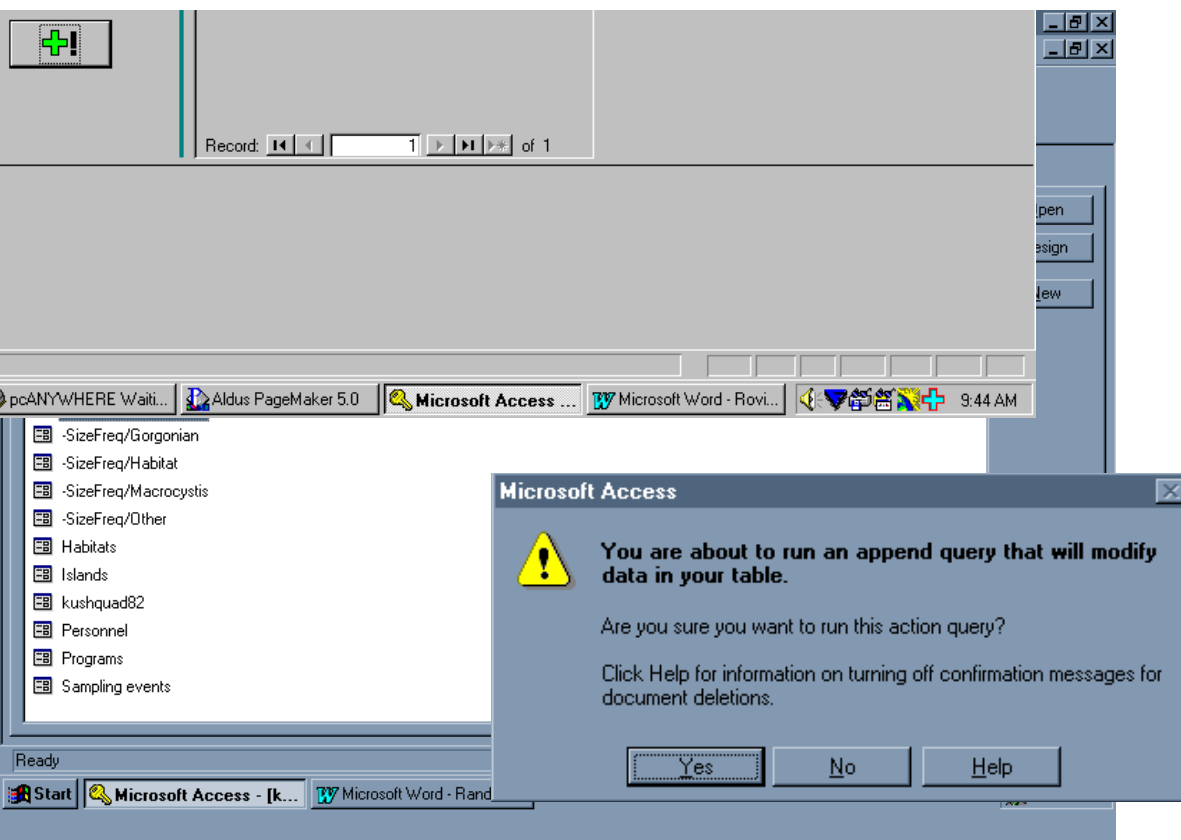
Data Corrections:

If the mistakes occur in the A or B fields corrections can be made by moving the cursor to the cell where the error occurs and make the correction.

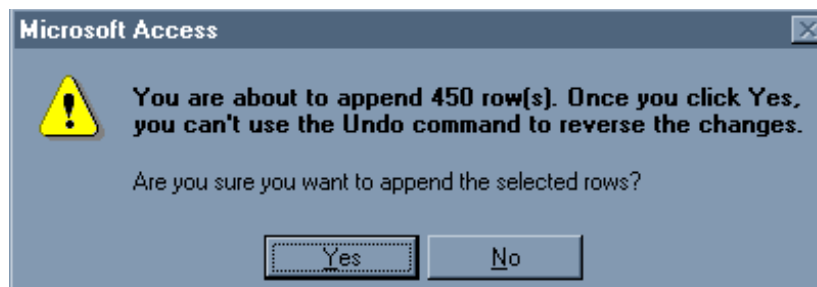
If the mistakes are in the Event, Island, or Site fields they should be corrected using a query. If you are unfamiliar with the correct procedure for running a query read pages 4-7 on queries.

Random Point Contact

1. Click on Forms tab.
2. Double click on -RandomPointContact.



8. Click “Yes” to message:



A form similar to the one below will appear.

Make sure that the Event number, Island code, and Site code are correct prior to data entry.

Note: When working in a form you are actually in part of the database table. Any changes made here are saved in the database table.

The cursor will be in the Count A column. Hitting the enter key will move the cursor from column to column.

9. Enter the data for that observer.
10. Choose close under the File pull down menu or Click on the close window button.

Visual Fish Transects

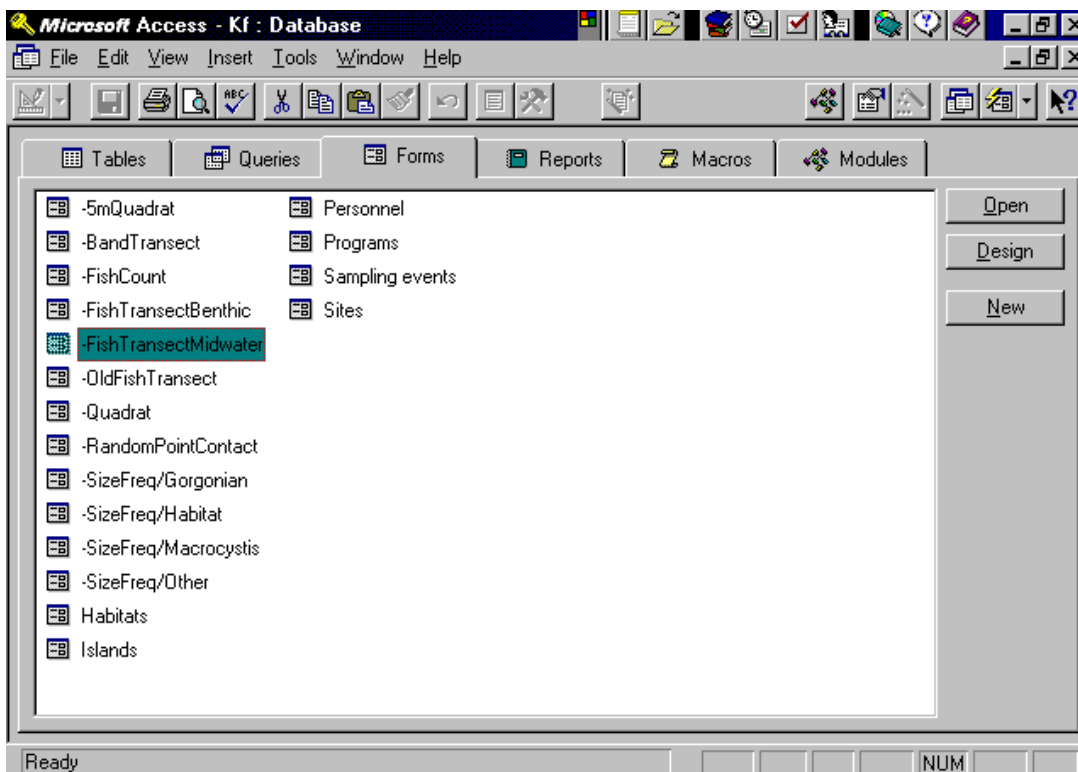
There are two parts to Visual Fish Transects: Midwater Fish and Benthic Fish. The two parts have different data sheets and thus different forms for data entry. Follow the instructions below to enter the data for each type of fish transect.

Note: visual fish transect were modified in 1996. For an explanation of how the data is compatible with past years data see Volume 1 of this handbook.

Midwater Fish Transects

You will need the observer numbers in order to complete data entry for this sampling technique (see section on **Observer Numbers**). Write the observer number next to the corresponding name at the top of the raw data sheet prior to data entry.

1. Click on Forms tab.
2. Double click on -FishTransectMidwater.



A form similar to the one below will appear.

3. Enter the Event number.
4. Enter the Island code.
5. Enter the Site code.
6. Enter the Date the transect was completed.
7. Enter the Observer number.

Microsoft Access - FishTransectMidwater

File Edit View Insert Format Records Tools Window Help

FishTransectMidwater

ProgramCode: KF

EventNumber: [dropdown]

IslandCode: [dropdown]

SiteCode: [dropdown]

Date: [text]

Observer# [text]

[+]

Species	Transect	Count
		0

Record: [navigation buttons] 1 of 1

Form View

NUM

Start Lotus cc:Mail - [Mailbox #1...] Microsoft Access - [-...] Microsoft Word - Midwater...

10:41 AM

You click Yes, the changes.

Yes No

A form similar to the one below will appear.

Species	Transect	Count
14001	1	0
14001	2	0
14001	3	0
14001	4	0
14002	1	0
14002	2	0
14002	3	0
14002	4	0
14003	1	0
14003	2	0
14003	3	0
14003	4	0
14004	1	0

11. Enter the data for that observer.
12. Write "Entered" at the top of the data sheet in red ink.
13. Select close under the File pull down menu or click on the close window button.

Note: When working in a form you are actually in part of the database table. Any changes made here are saved in the database table.

Data Checking:

Data are checked in the form view. Repeat steps 1-7, entering the Event number, Islands code, Site code, Date and Observer number for the data sheet you wish to check. One person should read the data sheet, while another person simultaneously reads the computer screen. Write "checked" at the top of the data sheet.

Data Corrections:

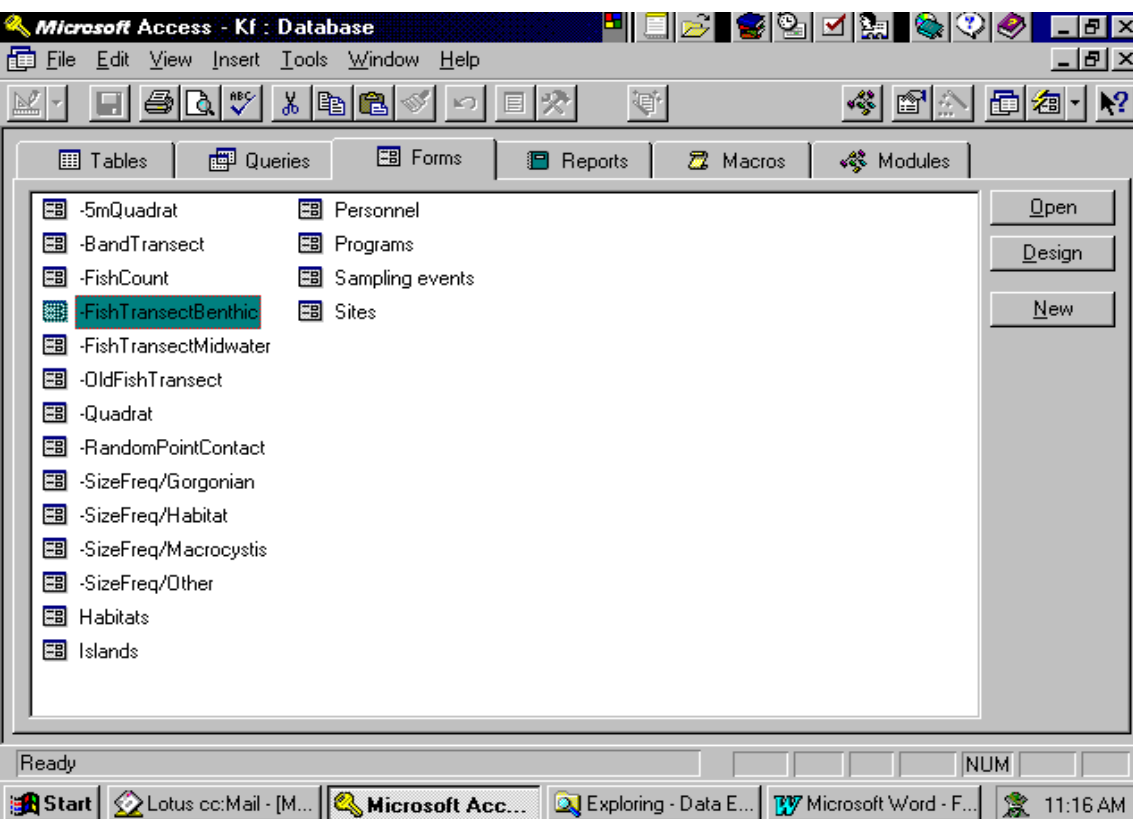
If the mistakes occur in the Count field, corrections can be made in the form view. Move the cursor to the cell where the error occurs and make the correction.

If the mistakes are in the Event, Island, Site, Date, Observer, or Species fields, they should be corrected using a Query. If you are unfamiliar with the correct procedure for running a query read [pages 4-7 on queries](#).

Benthic Fish Transects:

You will need the observer numbers in order to complete data entry for this sampling technique (see the section on **Observer Numbers**). Write the observer number next to the corresponding name at the top of the raw data sheet prior to data entry.

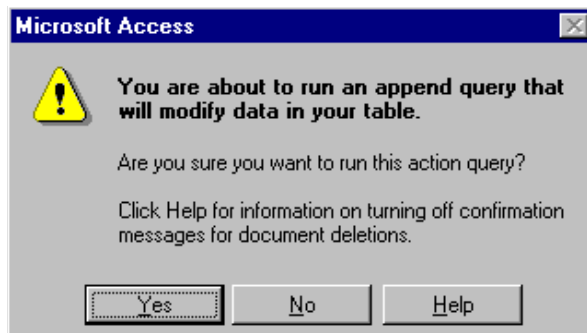
1. Click on Forms tab.
2. Double click on -FishTransectBenthic



A form similar to the one below will appear.

The screenshot shows the Microsoft Access application window titled "FishTransectBenthic". The interface includes a menu bar (File, Edit, View, Insert, Format, Records, Tools, Window, Help) and a toolbar with various icons. On the left, a vertical pane contains the form title "FishTransectBenthic" and several input fields: "ProgramCode:" with a text box containing "KF", "EventNumber:" with a dropdown menu, "IslandCode:" with a dropdown menu, "SiteCode:" with a dropdown menu, "Date:" with a text box, and "Obsr#" with a text box. Below these fields is a button with a plus sign and an exclamation mark. The main area of the form is a table with three columns: "Species", "Transect", and "Count". The first row of the table has empty text boxes for "Species" and "Transect", and a text box containing "0" for "Count". At the bottom of the table, there is a record navigation bar showing "Record: 1 of 1". The status bar at the bottom of the window indicates "Form View" and "NUM".

3. Enter the Event number.
4. Enter the Island code.
5. Enter the Site code.
6. Enter the Date.
7. Enter the Observer number.
8. Click on the run query icon.
9. Click "yes" to message:



10. Click “Yes” to message:

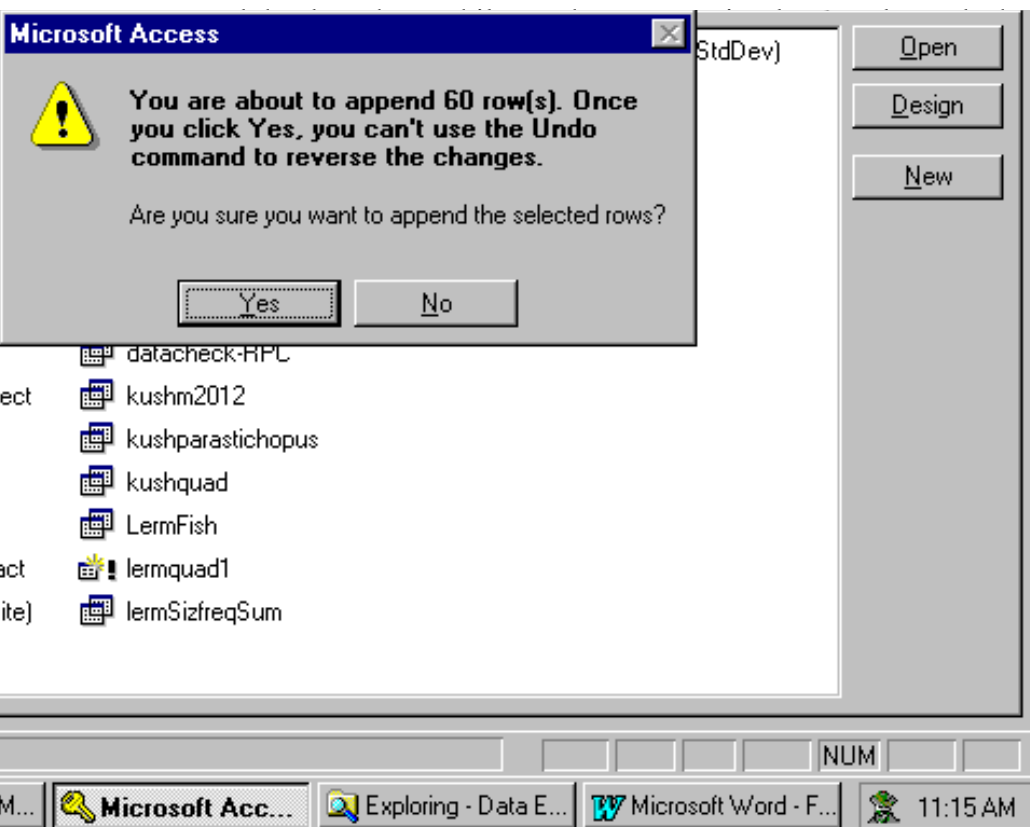
11. Enter the data for that observer.

12. Choose close under the File pull down menu or click on the close window button.

13. Write entered at the top of the data sheet.

Data Checking:

Data are checked in the form view. Repeat steps 1-7, entering the Event number, Island code, Site code, Date and Observer number for the data sheet you wish to check. Have one person computer screen. Write "checked"



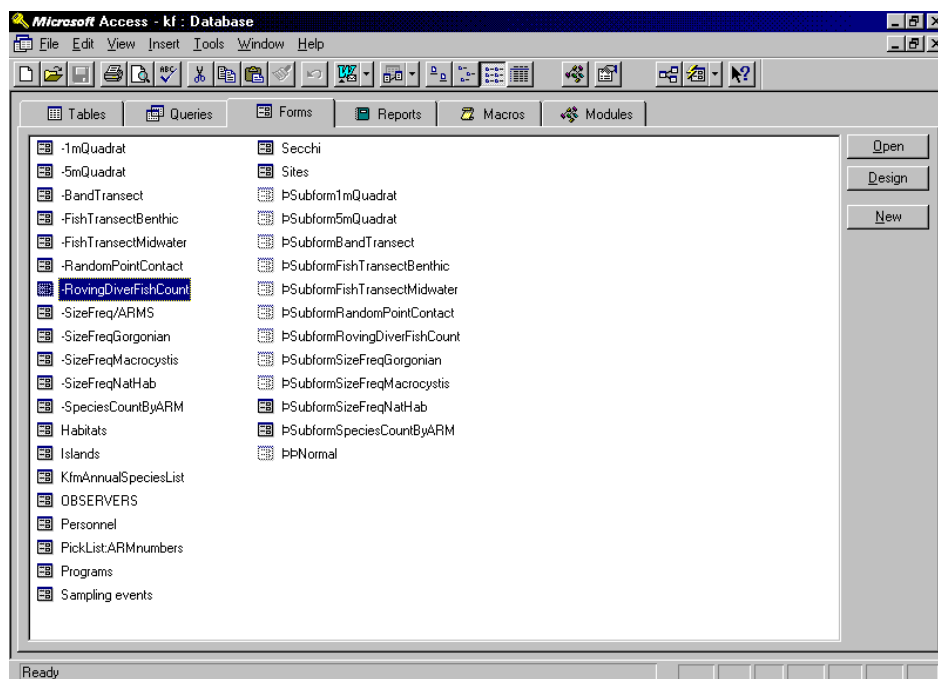
be made in the form view. Move on.
er, or Species fields they should be
cedure for running a query read

Roving Diver Fish Count

You will need the observer numbers in order to complete data entry for this sampling technique (see the section on Observer Numbers). Prior to data entry, write the observer number for each person who performed the fish count at the top of their respective column on the data sheet.

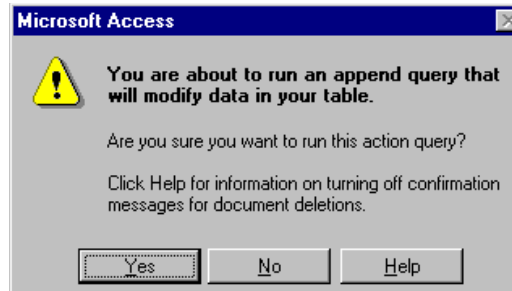
The species that are marked with an asterisk (*) on the data sheet cannot be left blank. If an observer did not see any of the species, be sure to give that species a score of zero and an abundance of dash (-). Write all zeros on the data sheet prior to data entry.

1. Click on the Forms Tab.
2. Double click on the form -RovingDiverFishCount

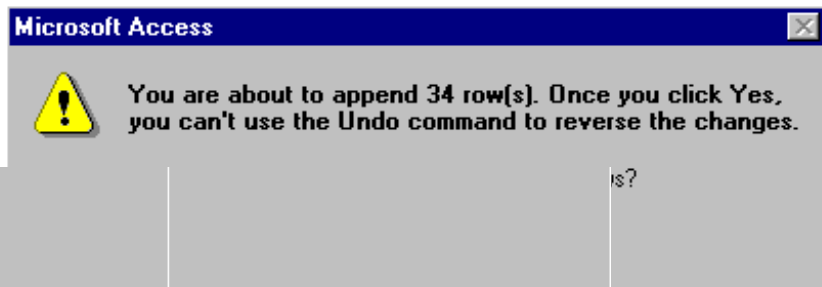


A form similar to the one below will appear.

3. Enter Event number.
4. Enter Island code
5. Enter Site code.
6. Enter the Date the fish count was done.
7. Enter the Observer number of the person who did the fish count you are entering.
8. Click on the Run Query icon.
9. Click "yes" to the message:



10. Click "yes" to the message:



Record: 1 of 1

Obsr# 4

California scorpionfish

California sheephead, fem.

California sheephead, juve.

California sheephead, mak.

copper rockfish

qaribaldi

Record: 1 of 34

Form View

Roving Diver Fish Count

Start pcANYWHERE Waiti... Aldus PageMaker 5.0 Microsoft Access ... Microsoft Word - Rovi... 10:37 AM

11. Enter the score and abundance for each fish that was seen by that observer.
12. If a species was found that is not listed in the form, go to the end of the form and put your cursor in a Common Name field that is blank. Use the pull down menu in the right hand side of the Common Name field to find the fish you need to add. Now enter the score and abundance for that fish (see below).

Data checking:

1. Click on the Queries tab.
2. Double click on the query "datacheck-RovingDiverFC".
3. Enter the Event number.
4. Enter the Site code.
5. Enter the Island code.
6. Enter the date the fish count was done. NOTE: The month, day and year must each have two numbers (e.g. 06/04/97 equals June 4, 1997).

A table similar to the one below will appear.

Event	Island	Site	Date	Observer	CommonName	Score	Abundance
9707	SB	SESL	9/23/97	1	black surfperch	0	-
9707	SB	SESL	9/23/97	1	blackeye goby	10	M
9707	SB	SESL	9/23/97	1	blacksmith	10	M
9707	SB	SESL	9/23/97	1	blue rockfish	0	-
9707	SB	SESL	9/23/97	1	blue-banded goby	0	-
9707	SB	SESL	9/23/97	1	California sheephead, female	9	F
9707	SB	SESL	9/23/97	1	California sheephead, juvenile	0	-
9707	SB	SESL	9/23/97	1	California sheephead, male	0	-
9707	SB	SESL	9/23/97	1	garibaldi	10	F
9707	SB	SESL	9/23/97	1	garibaldi, juvenile	0	-
9707	SB	SESL	9/23/97	1	island kelpfish	10	M
9707	SB	SESL	9/23/97	1	kelp bass, calico bass	6	S
9707	SB	SESL	9/23/97	1	kelp rockfish	0	-
9707	SB	SESL	9/23/97	1	olive rockfish	0	-
9707	SB	SESL	9/23/97	1	opaleye	0	-
9707	SB	SESL	9/23/97	1	painted greenling	9	F
9707	SB	SESL	9/23/97	1	pile surfperch	0	-
9707	SB	SESL	9/23/97	1	rock wrasse, female	9	S
9707	SB	SESL	9/23/97	1	rock wrasse, male	0	-
9707	SB	SESL	9/23/97	1	senorita	9	M
9707	SB	SESL	9/23/97	1	striped surfperch	0	-
9707	SB	SESL	9/23/97	2	black surfperch	0	-
9707	SB	SESL	9/23/97	2	blackeye goby	9	C
9707	SB	SESL	9/23/97	2	blacksmith	7	C
9707	SB	SESL	9/23/97	2	blue rockfish	0	-

NOTE: The table will contain data from ALL of the observers who performed fish count at that site in numerical order (by observer number).

7. Have one person read off the data screen while the other person reads off the data sheet.
8. Close the table.
9. Write "checked" at the top of the data sheet.

Data Corrections:

Since data are checked using a table generated by a select query, corrections cannot be made to the table generated from the query. If mistakes are found write down all the pertinent information (Event, Island, Site, Date, Observer, etc.).

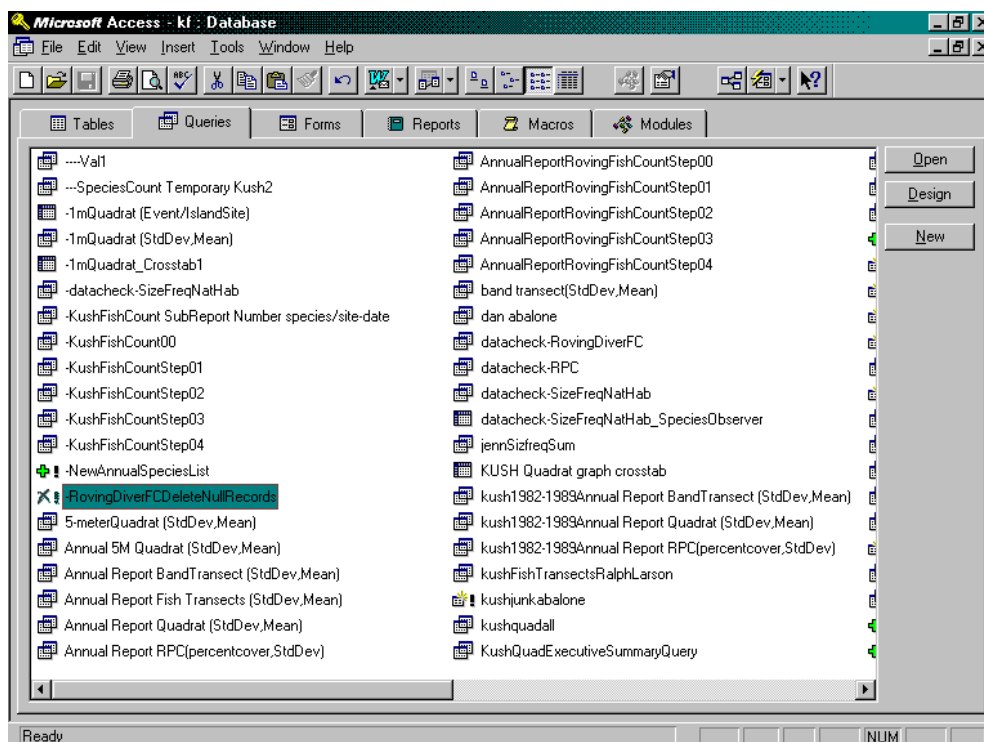
If mistakes are found in the Common Name, Score or Abundance fields, repeat steps 1-7 in the data entry instructions. Move the cursor to the record with the error and make the correction.

If the mistakes are in the Event, Island, Site, Date, or Observer, fields they should be corrected using a Query. If you are unfamiliar with the correct procedure for running a query read pages 4-7 on queries.

Deleting Null Records

Once all the fish count data for a cruise have been entered **and checked** then you need to delete all of the records that have no values (null) entered for score and abundance.

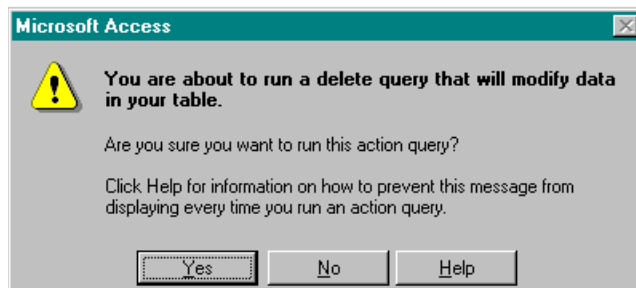
Because the query you are about to run is a delete query you must be logged on to Access as the user "SuperKF". (See the page 1 about logging on as SuperKF if you are unfamiliar with this procedure).



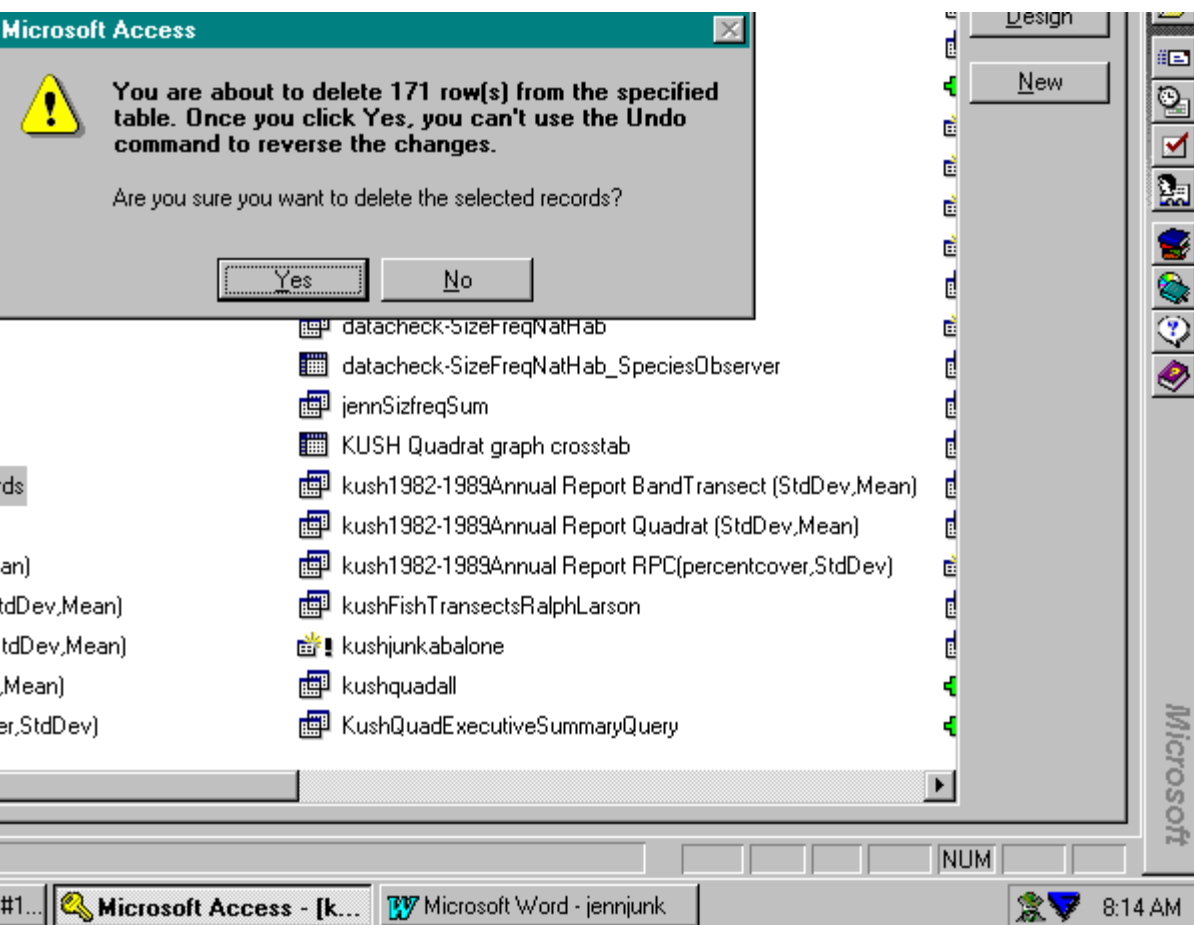
1. Click on the Queries tab.
2. Double click on the query -RovingDiverFCDeleteNullRecords.

Note: Notice that this query has an X and an exclamation point in front of the name. This means that it is a delete query, so proceed cautiously!!

3. Click "yes" to the following message:



4. Enter the Event number of the data you are working with.
5. A message similar to the one shown below will appear (the number of records listed will be different each time). If the number of records to be deleted sounds reasonable (i.e. not 1000's of records!) then click "yes" to the message:



Changing fish species list

The common names of fish that appear automatically in the form when you append new records in the data entry steps #9 and #10 are controlled by a table called -FishSpeciesList. If you need to change the fish that are automatically appended, use the following instructions.

1. Click on Tables tab.
2. Double click on -FishSpeciesList.

A table similar to the one below will appear.

3. Check the boxes in the column “FishCountAuto” for the species that you would like to appear automatically in the data entry form. The species in the column "FishCountPick" are the species that show up in the pull down menu. Do not change the checks in the column “FishCountPick.”
4. Close the table.

Natural Habitat Size Frequency Distributions

Natural habitat size frequency distributions for all species, **except** *Macrocyctis pyrifera*, *Stylaster (Allopora) californica*, and gorgonians, have similar methods of data entry. Size frequencies are separated by observer. Each observer should have only one data sheet per site, but the data sheet may have multiple species recorded on it. To enter data for Natural Habitat Size Frequency distributions use the following procedures.

1. Click on Forms tab.
2. Double click on SizeFreqNatHab.

A form called SizeFreqNatHab will appear.

3. Enter the Event number.
4. Enter the Island code.
5. Enter the Site code.
6. Enter the Observer number.
7. Enter the sampling technique (e.g. b for band transects or q for quadrats).

The form will now look similar to the one below.

8. Select the species number for the species you wish to enter data from the pull down menu in the Species field.
9. In the Size field, enter each size observed for that species.
10. In the count field, enter the number of times each particular size was observed

e.g. size	count	
25	1	= one individual observed at 25mm
32	2	= two individuals observed at 32mm

If additional species were counted by the same observer repeat steps 8-10.

11. Chose close under the File pull down menu or click on the close window button.

Data Checking:

Data for Natural Habitat size frequencies are checked using a query once all the data are entered for a site for each sampling cruise (Event number).

1. Click on the Queries tab.
2. Double click on Datacheck-SizeFreq.
3. Enter Event number of the data you would like to check.
4. Enter Island code.
5. Enter Site code.

A table of the selected data will appear as seen below.

Init	Species	Size	Count
1	11001.00	49	1
1	11001.00	54	1
1	11001.00	62	1
1	11001.00	66	1
1	11001.00	70	1
1	11001.00	75	3
1	11001.00	77	1
1	11002.00	18	1
1	11002.00	45	1
1	11002.00	52	1
1	11002.00	54	2
1	11002.00	64	1

The selected table contains all the data for the specific Event, Island, and Site you have selected. For example: In the table above, observer #1 measured 1 *Asterina miniata* (species number 11001) 49mm; another *Asterina miniata* 54mm; etc.

6. Have one person read the data sheet while another person simultaneously reads the computer screen.

Note: If errors are found, write down all pertinent information (e.g. Event, Island, Site, Observer and species) and follow the directions in the data correction section below.

7. Write "checked" at the top of the data sheet. Chose close under the File pull down menu or click on the close window button.

Data Corrections:

Since data are checked using a select query, corrections to the data are impossible during data checking. When mistakes are found make a note of the pertinent information necessary for the correction.

If the mistakes are in the Event, Island, Site, Observer, Technique or Species fields or if the mistakes occur in more than one cell, it maybe easiest to use an update query to make the necessary corrections. If you are unfamiliar with the correct procedure for running a query read pages 4-7 on queries.

If the mistakes occur in the size or count fields, corrections can be made in the form view. To get into form view follow data entry steps 1 - 7 for the specific data sheet you have selected. Move the cursor to the cell where the error occurs and make the correction.

To delete an entire record:

1. Log into Access as SuperKF (see page 1 if you are unfamiliar with this procedure).
2. Click once on the left hand margin next to the record you wish to delete.
3. Under the Edit pull down menu, select delete record.

To add records:

1. Follow data entry steps 1- 11.

Gorgonian Size Frequency Distributions

Size frequencies for Gorgonians and *Stylaster (Allopora) californica* use the following procedure.

1. Click on Forms tab.
2. Double click on SizeFreqGorgonian

A form called SizeFreqGorgonian will appear.

3. Enter Event number.
4. Enter Island code.
5. Enter Site code.
6. Enter the Observer number.
7. Enter Species code.

The form will now look similar to the one below.

The screenshot shows the Microsoft Access application window titled "Microsoft Access - SizeFreqGorgonian". The menu bar includes File, Edit, View, Insert, Format, Records, Tools, Window, and Help. The toolbar contains various icons for file operations and data manipulation. The form is titled "SizeFreqGorgonian" and is in "Form View". On the left side, there are input fields for ProgramCode (KF), EventNumber (9706), IslandCode (SM), SiteCode (WL), Observer# (1), and Species (6006). On the right side, there is a table with columns Species, Height, and Width. The Species column contains the value 6006, and the Width column contains the value 0. At the bottom of the table, there is a record indicator showing "Record: 1 of 1". The status bar at the bottom of the window shows "Form View" and a numeric keypad icon.

8. Check that the correct species code is entered in the form.
9. Enter the data making sure the height and width data are entered in the correct fields.
10. Upon completion of data entry, close the form by clicking on the close window button at the top right of your screen or select close under the file pull down menu. The data will automatically be saved. Write "entered" at the top of the data sheet.

Data Checking:

1. Repeat steps 1-7, entering the Event number, Island code, Site code Observer number and species code for the data sheet you wish to check.

A form similar to the one below will appear.

Species	Height	Width
6006	48	48
6006	34	19
6006	42	14
6006	13	7
6006	49	38
6006	50	21
6006	38	20
6006	30	7
6006	43	40
6006	41	28
6006	22	18
6006	43	38
6006	48	36

2. Have one person read the data sheet while the other person simultaneously reads the data on the computer screen.
3. Write "checked" on the data sheet. Close the form upon completion of data checking.

Data correction:

Corrections to the height and width fields can be made in the form view.

Corrections to the Event number, Island code, Site code, Observer number and Species code should be made using a query. If you are unfamiliar with the correct procedure for running a query read pages 4-7 on queries.

To delete an entire record:

1. Log into Access as SuperKF (see page 1 if you are unfamiliar with this procedure).
2. Click once on the left hand margin next to the record you wish to delete.
3. Under the Edit pull down menu, select delete record.

To add records:

1. Repeat data entry steps 1-9.

Macrocystis pyrifera Size Frequency Distributions

Size frequencies data for *Macrocystis pyrifera* uses the following procedure.

1. Click on the Forms tab.
2. Double click on -SizeFreqMacrocystis.

Form similar to the one below will appear

3. Enter the Event number.
4. Enter the Island code.
5. Enter the Site code.
6. Enter the Observer number.
7. Check that the species code defaults to the correct number.
8. Enter the data for that observer.

Note: Be sure to enter stipes and width into the correct columns.

9. Write "entered" at the top of the data sheet. Close the form by selecting close under the file pull down menu.

Data checking:

Repeat steps 1-6, entering the Event number, Island code, Site code, and Observer number for the data sheet you wish to check.

1. Have one person read through the data sheet while the other person simultaneously reads the data on the computer screen.
2. Write "checked" at the top of the data sheet.
3. Close the form upon completion of data checking.

Data corrections:

Changes to the number of stipes and diameter fields can be made in the form view.

Changes to the Event number, Island code, Site code, or Observer number should be made using a query. If you are unfamiliar with the correct procedure for running a query read pages 4-7 on queries.

To delete an entire record:

1. Log into Access as SuperKF (see page 1 if you are unfamiliar with this procedure)
2. Click once on the left hand margin next to the record you wish to delete
3. Under the Edit pull down menu, select delete record

To add records:

1. Repeat data entry steps 1-6.
2. Scroll to the bottom of the records and click once in the stipes field.
3. Enter the missing record(s).

Artificial Recruitment Modules (A.R.M.s)

To enter size frequencies for Artificial Reef Modules use the following procedure.

1. Click on the Forms tab.
2. Double click on the form titled -SizeFreqArms.

A form called Size FreqArms will appear.

3. Enter the Event number .
4. Enter the Island code.
5. Enter the Site code.
6. Enter the ARM number and hit return.

7. Click on the run query icon.



8. Click “yes” to message:

9. Click “yes” to message:

The form will now look similar to the one below.

Microsoft Access - SizeFreqArms

File Edit View Insert Format Records Tools Window Help

SizeFreqArms

ProgramCode: KF

EventNumber: 9703

IslandCode: SC

SiteCode: GI

ArmNo: 2326

+

****NOTE: If both purple and red urchins were not measured be sure to remove check marks for ALL four species of urchins (i.e. species numbers 11004, 11005, 11006 and 11009).**

Species	Size	Count	Comments
9002			
9003			
9004			
9005			
9006			
9007			
9008			
9009			

10. Working in numerical order (using the species numbers) pick the first species measured in the ARM. Put the appropriate species number in the species field using the pull down menu.

11. In the size field, enter the sizes observed for that species.

12. In the count field, enter the number of times each size was observed

e.g. size count

13 2 = one individual 12mm

13 2 = two individuals 13mm

13. Repeat steps 10-12 for each additional species.

14. Write "entered" at the top of the data sheet. Close the form by clicking on the close window button or select close under the File pull down menu.

Form View

Microsoft Access - [SizeFreqArms] Microsoft Word - ARM3dat... Lotus CC-Mail - Message...

10:59 AM

Data Checking:

1. Repeat steps 1-6 entering the appropriate Event number, Island code and ARM number for the data sheet you wish to check.
2. Have one person read the computer screen while another person simultaneously reads the data sheet.
3. Write "checked" at the top of the data sheet.
4. Close the form by selecting close under the file pull down menu or clicking on the close window button.

Data Corrections:

If mistakes occur in the size or count columns, corrections can be made in the form view. To get into form view follow steps 1 - 6 for the specific data sheet you have selected. The form with the previously entered data will appear. Move the cursor to the cell where the error occurs and make the correction.

To delete a record

1. Click on the left margin adjacent to the line you would like to delete (highlighting the row)
2. Press delete or select delete record under the Edit pull down menu.

To add a record

1. Follow data entry steps 1- 12.

Adding additional ARM numbers

There are certain situations when a new number tag is assigned (e.g. if an ARM number tag is lost or if a new ARM is made and placed at a site). Before data can be entered for a new ARM, the new number must be entered into the database. (Failure to add the new ARM number will result in an error message when attempting data entry for that ARM.)

To add a new ARM number:

1. Click on the Forms tab.
2. Double click on PickListArms.

A form called PickListArms will appear.

3. Enter the Island code.
4. Enter the Site code.

The form will now show all of the data on ARM numbers at that site. All of the ARM numbers ever used at the site will be listed in the ARM column. Only the ARM numbers that are currently in use will have a check in the Active box. Information about when the ARM was put into place or when a number change occurred will be in the Comments section.

Arm	Active	Comments
41		1992-1994 = 2362
42		1992-1994 = 2365
43		1992-1995 = 2370
44		1992-1994 = 2363
45		1992-1994 = 2364
95		1992
96		1992
97		1992
98		1992
99		1992
108		1993-1994 = 2369
177		1993-1994
188		1994-1995 = 2353
2351	<input checked="" type="checkbox"/>	1996
2352	<input checked="" type="checkbox"/>	1996
2353	<input checked="" type="checkbox"/>	1996
2354	<input checked="" type="checkbox"/>	1996
2355	<input checked="" type="checkbox"/>	1996
2356	<input checked="" type="checkbox"/>	1996 This is one of the five ARMs east of the transect
2357	<input checked="" type="checkbox"/>	1996 This is one of the five ARMs east of the transect
2358	<input checked="" type="checkbox"/>	1996 This is one of the five ARMs east of the transect
2359	<input checked="" type="checkbox"/>	1996 This is one of the five ARMs east of the transect

5. If you are adding a number for a new ARM, go to step #6.
If you are changing an ARM number (because the previous number was lost), go to step #10.
6. Go to the bottom of the list and add the new number.
7. Click to put a check in the Active Box.
8. In the comments, type in the current year.
9. Close the form.
10. Try to figure out what the old number was and unclick the Active box on the old ARM number.
11. If you successfully figured out the old ARM number, write the year we stopped using the old number and equals the new ARM number under comments (e.g. 1993-1994=2369).

12. Type the new number at the end of the list.
13. Click the Active box.
14. Type the year under the comments.
15. Close the form.

Abalone only ARMS

At Yellowbanks there are five ARMs that are east of the zero end of the transect. These ARMs are only sampled for abalone.

If these ARMs are sampled and no abalone are found, follow data entry steps 1-10 but do not enter any data. In other words, run the query, uncheck every species EXCEPT red, pink and green abalone (species numbers 9002, 9003 and 9004) and close the form.

Temperature Units

In the field:

1. Upon bringing the temperature unit to the surface, note the time and date that it was retrieved. Once you are dry, make sure this information is copied into the *Hobotemp* notebook.

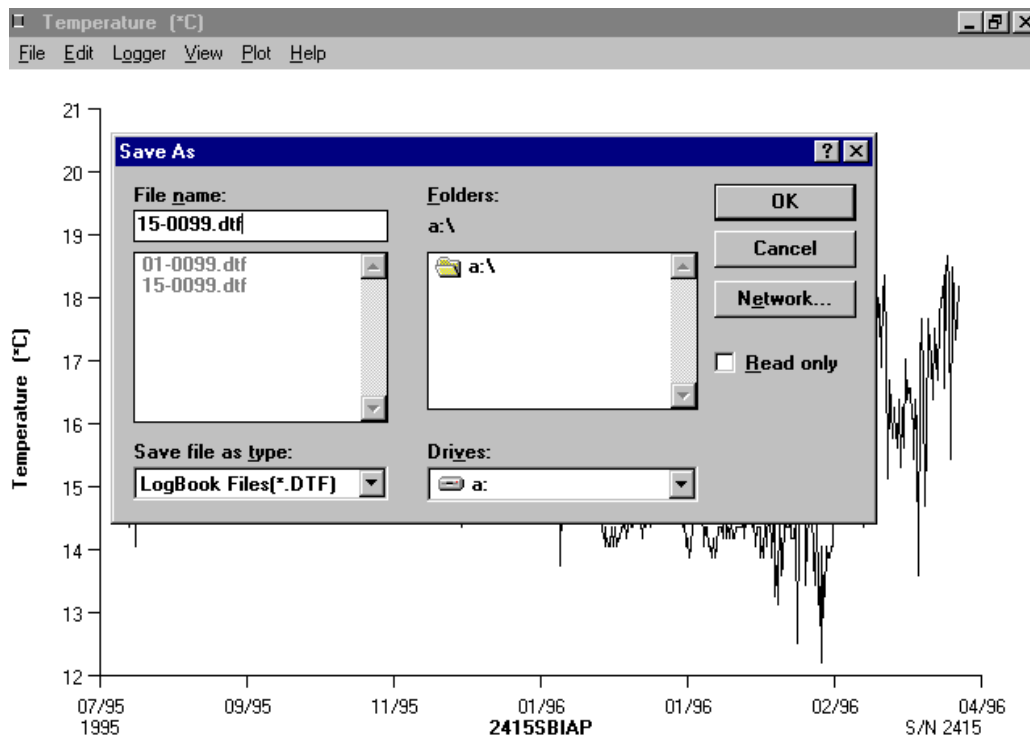
***Note: it is very important to record the correct time as the temperature logger is still recording data and these erroneous data points will need to be deleted later.**

2. Unscrew the housing, remove the temperature unit while being careful to keep the temperature logger clean and dry (you may want to have one person open the housing and the other with dry hands remove the logger).
3. Look to see if the red light is blinking on the logger to assure it is still working. If it isn't, make sure you record this in the *Hobotemp* notebook under notes.
4. Open the Station log sheet, in the *Hobotemp* notebook, and make sure you have recorded the date and time the temperature logger was retrieved.
5. Now assign a file # from the DTFLOG in the blue book. These file names are given to the dtf. files for archiving the original data files collected from the temperature loggers. The numbering system is XX-0000 where XX is the station number (For example Wyckoff Ledge is station #1 so XX would be 01) and 0000 is the next consecutive file number (0001, 0002, 0003...) acquired from the DTFLOG sheet.
6. Hook up the laptop computer with the mouse and the interface cable. Turn on the computer and get into the Logbook program from the Onset applications menu in Windows.
7. Plug in the temperature logger to be downloaded to the computer using the interface cable.
8. Using your mouse single click on Logger, and then Readout (see picture below).

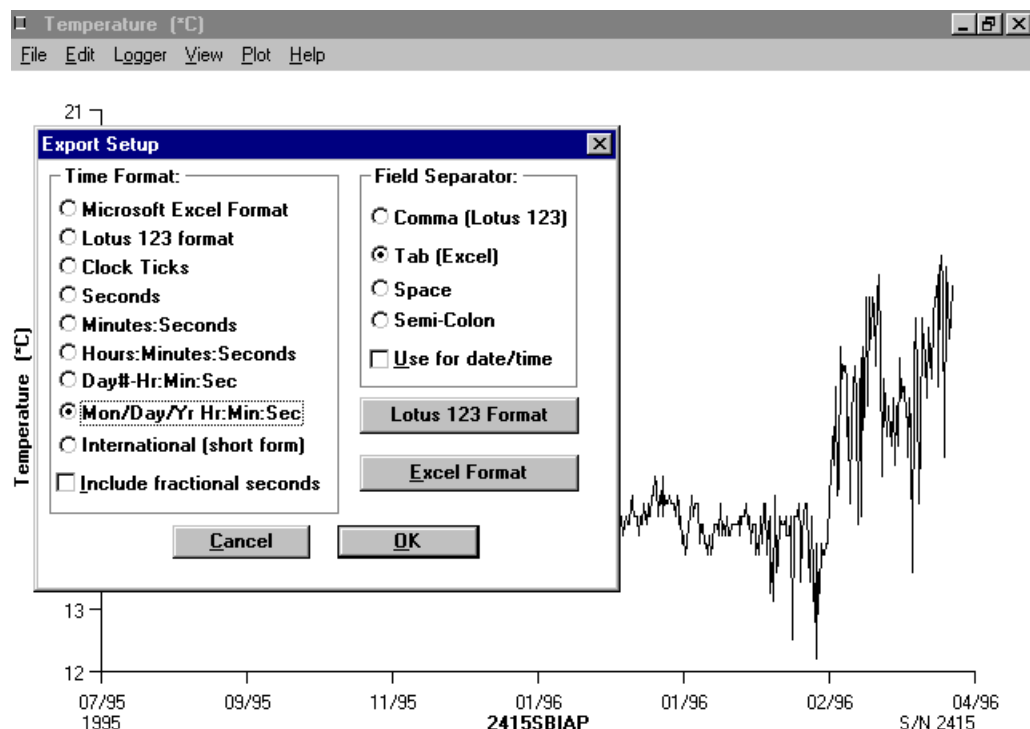


****Note: if you are retrieving data DO NOT press launch as all of the data will be lost for ever if you do so!!**

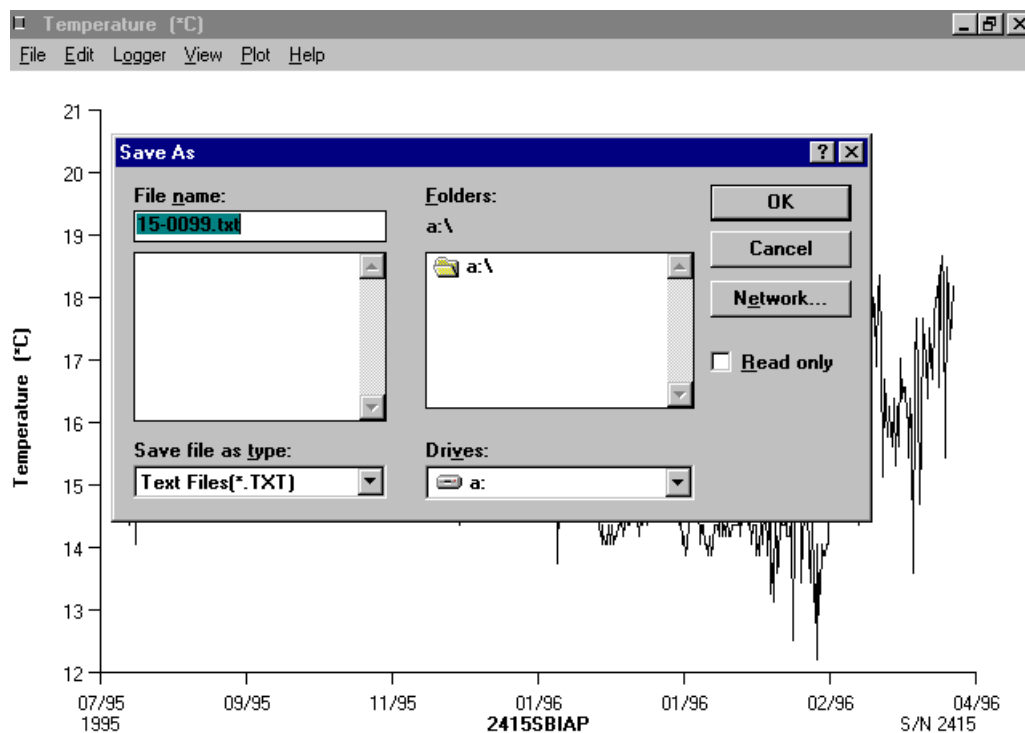
9. The Logbook program will off-load the data, this will take a minute or so. The program will now ask you to name the dtf file and you will need to place the file name that was assigned to it in step number 7 (XX-0000.dtf). Save it in on a 3.5" disk in the a:/ directory. See below:



10. You will now need to export the file as a txt. file. Later, this file will be used to export the data to Access. Under the file pull down menu, click on Export setup. Select both the Field Separator: Tab(Excel) and Time Format: Mon/Day/Yr Hr:Min/Sec. Now click "OK". See below:



11. Under the file pull down menu, click on Export Plot Data. The file name should default to the same XX-0000 as above for the .dtf file, but should now be labeled as a text (txt) file. Make sure the directory is correct, and then click "OK" to export the data to a txt file. See below:



12. Repeat steps 8-11, saving the file to the hard drive of the laptop computer. Under the file pull down menu, go to Save As and select drive C: and filename logbook/XX-0000.dtf and .txt. Click "OK". This backup is conducted so that a copy of all of the temperature data is available if the 3.5" disk fails. These files can be deleted once they have been archived in the office.

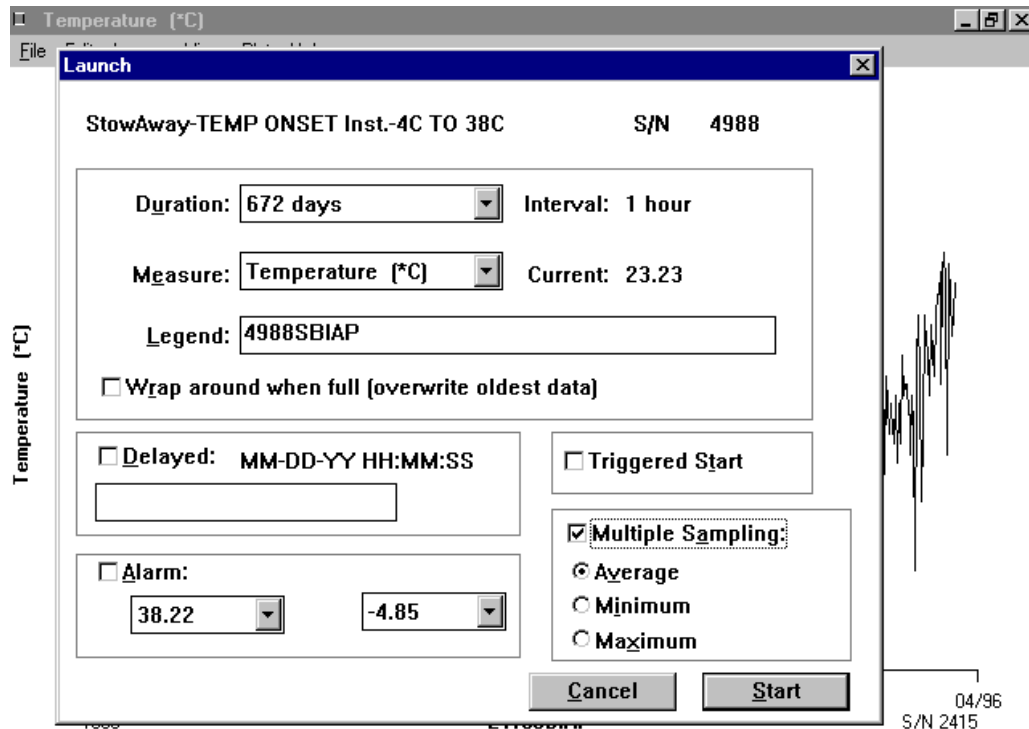
Preparing temperature logger for deployment:

1. Change the battery in the temperature unit. Make sure you record this in the unit log of the *Hobotemp* notebook. Before installing the battery, short it out using a paper clip for about .5 second. This will increase the battery life. When placing the new battery in the unit, watch for five long blinks of the red light, indicating the unit is working.
2. Hook up the laptop computer with the mouse and the interface cable. Turn on the computer and get into the Logbook program from the Onset applications menu in Windows.
3. Plug in the temperature logger to be launched to the computer using the interface cable.
4. Click on logger, then launch.

If deploying a Stowaway temperature logger the settings should be Duration: 672 days or 1 hour sampling interval (1355 days if the unit is a 32k model); Type in the legend: first the unit # followed by the Island and site letter code (example 4988SBAP). Next, click on "start" if you are sure you have correctly done the above and all of the data from the unit has already been downloaded (see below).

Note: Once you launch this unit all of the previous data collected on it is deleted!!!

5. Write down the time that the unit was launched and deployed in the *Hobotemp* notebook.

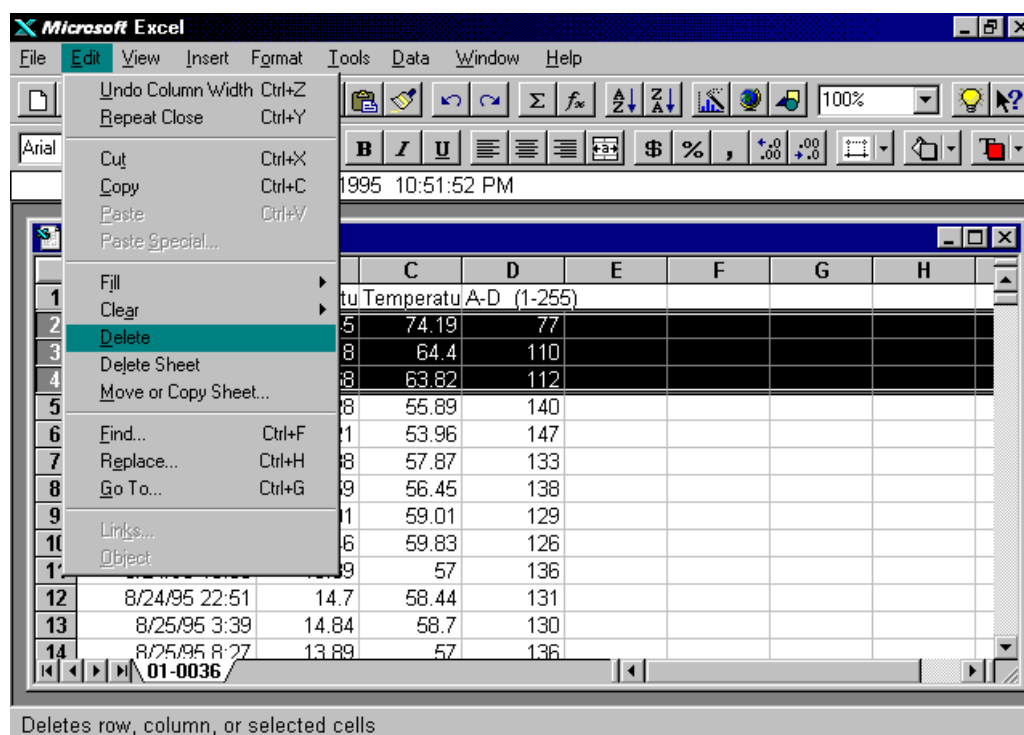


6. Clean the outside of the housing and the threads. Grease the O-ring and make sure all the surfaces are clean.
7. Deploy the unit (if you are unsure of the correct procedure to deploy temperature units see the section on Oceanographic Conditions in Volume 1 of this handbook).

In the office after a cruise:

1. The dtf files with their associated XX-XXXX.dtf names need to be archived copy the files to f:\im\weather\hobo_.dtf.
2. Export the files to Access. The first step is to call up the xx-xxxx.txt file in MS Excel (This .txt file will come off the 3.5" backup disk you used in the field). In Excel delete the erroneous data (these are the data points that the temperature logger recorded after the logger was launched on the surface, but not attached to the site underwater). Using the notes recorded in the *Hobotemp* data notebook, one should be able to figure out which are the erroneous data points by looking at the date and times the temperature loggers were deployed and retrieved. Make sure you add or subtract (depending on retrieval or deployment) at least an hour to the times that were recorded, to compensate for the time it takes the underwater housings to equilibrate to the ambient sea temperature.

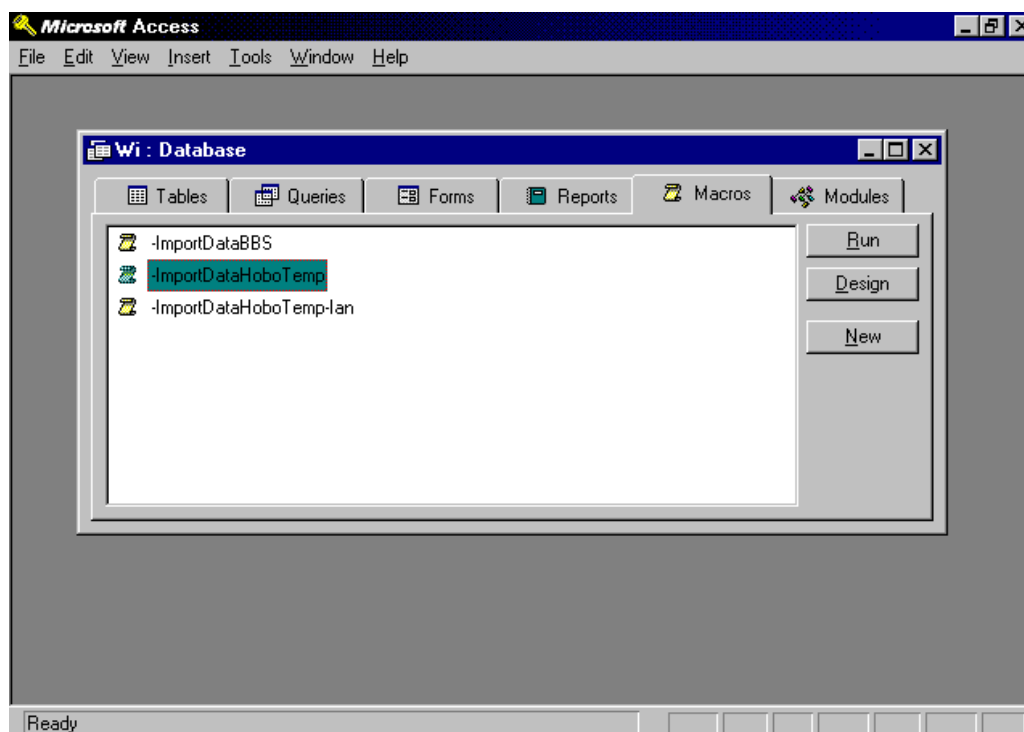
Removing “erroneous” data points:



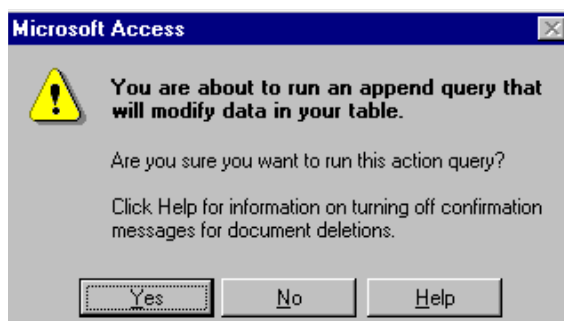
3. After the erroneous data are deleted, save the file to F:\im\weather\hobo_dtf\hobotemp.txt. Make sure that you save the file as a *delimited* file. This file (F:\im\weather\hobo_dtf\hobotemp.txt) is used by the macro in Access to import the data, and can be copied over each time the macro is run.

Click "yes" to the message:

4. Run the Access macro. Close Excel, and get into the WI Access database under the directory F:\im\weather\WI. Go to Macro and select -ImportData-HoboTemp. Then select RUN (see picture below).



5. Click "yes" the message:

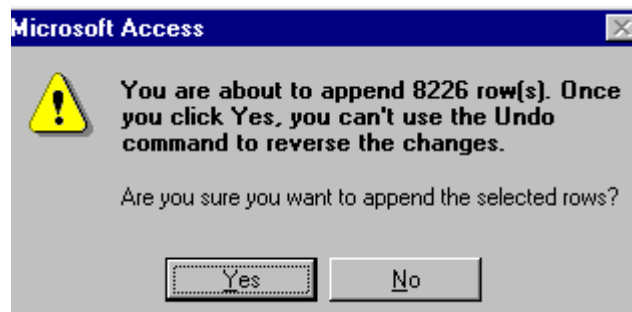


6. Enter the Island code.
7. Enter the Site code.
8. Enter the Unit number.

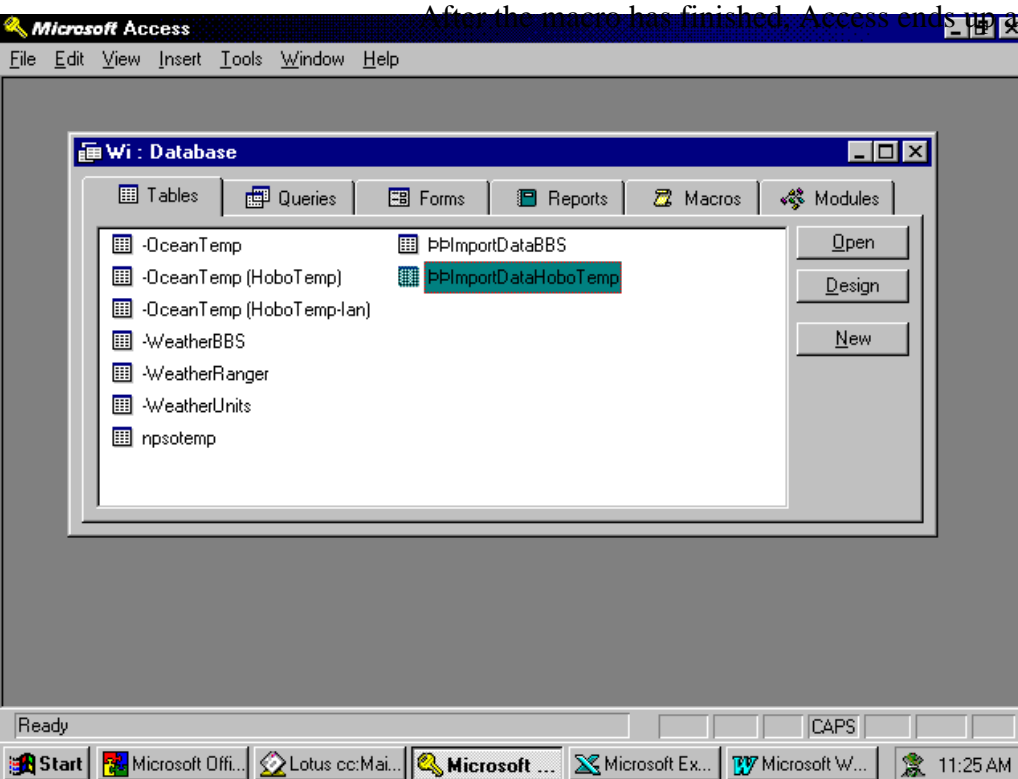
***Note: You will be able to find the temperature unit number from the blue Hobotemp notebook.**

9. Click "yes" to the message:

****Note: the number of rows that are appended should vary from site to site depending on how long the temperature logger was deployed.**



After the macro has finished, Access ends up at the screen below:



10. Close and check to see that the data was transferred correctly using a select query.